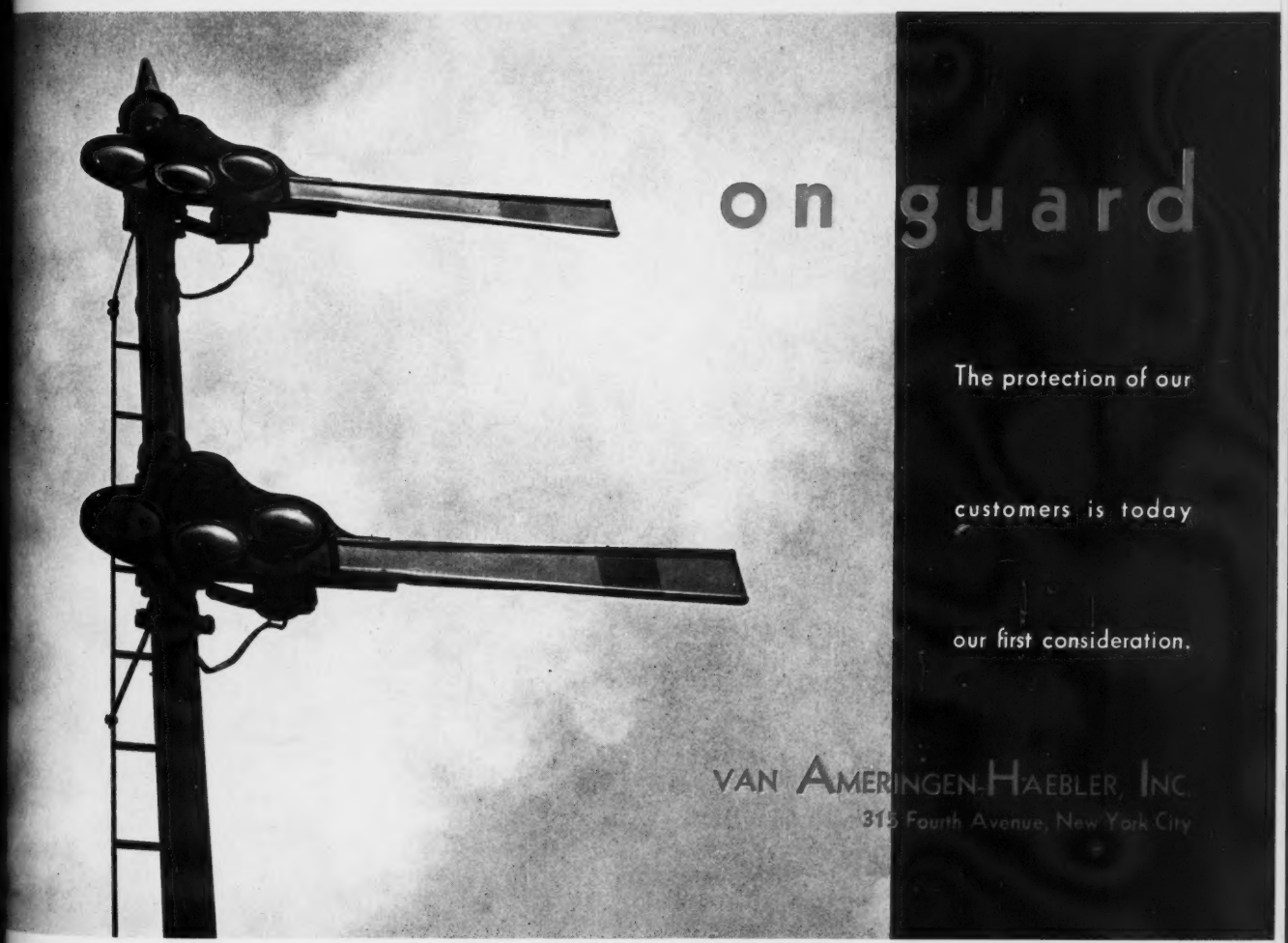
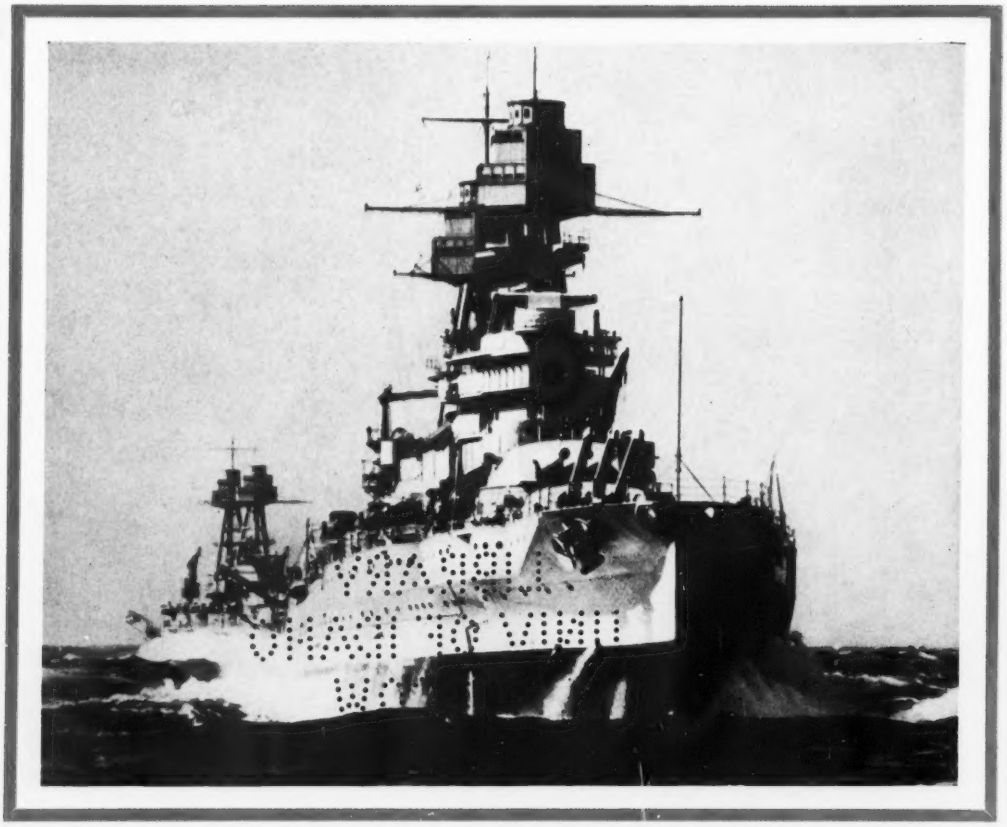
SOAP

SANITARY CHEMICALS



December 1941



No Compromise . . .

IN a world at war, the task of obtaining raw materials from distant lands becomes increasingly difficult day by day. The "D & O" organization has exerted itself to the utmost to render service to its customers in spite of all obstacles, and it has been successful to a marked degree. There has been and shall be no compromise at "D & O." Our aim is to maintain the high standards of service for which "D & O" has been known the world over throughout its experience of nearly a century and a half. We shall continue to endeavor to give our best to all of our friends both old and new.

DODGE & OLCOTT COMPANY

180 Varick Street — New York, N. Y.

D&O
ESTABLISHED IN 1798

BOSTON : CHICAGO : PHILADELPHIA : ST. LOUIS : LOS ANGELES

Plants and Laboratories . . . Bayonne, N. J.

WHY BALTIMORE?

TODAY, what with shortages and government priorities, it is more important than ever that you buy from firms who have the quickest, easiest access to raw materials. That's why you benefit from doing business with FULD BROS.

Baltimore boasts America's finest harbor facilities . . . and FULD BROS. is located just a few feet from the water's edge. Obviously, FULD BROS. can eliminate costly reloading of raw materials into freight cars and trucks . . . which means additional savings to you!

That's one of the big reasons why FULD BROS. can consistently maintain the superior quality standards which discriminating jobbers and consumers alike have learned to expect in FULD BROS'. Sanitary Chemicals.

DEODORANT BLOCKS
LIQUID DEODORANTS
POWDERED WAXES
FLOOR TREATMENTS

DEODORANT BLOCK HOLDERS
SELF-POLISHING WAXES
LIQUID SOAPS • OIL SOAPS
INSECTICIDES • DISINFECTANTS

FURNITURE POLISHES
PLUMBING SPECIALTIES
SPECIAL CLEANERS
SOAP DISPENSERS

LIQUID CLEANERS
PASTE WAXES
FLOOR SEALS
METAL POLISHES

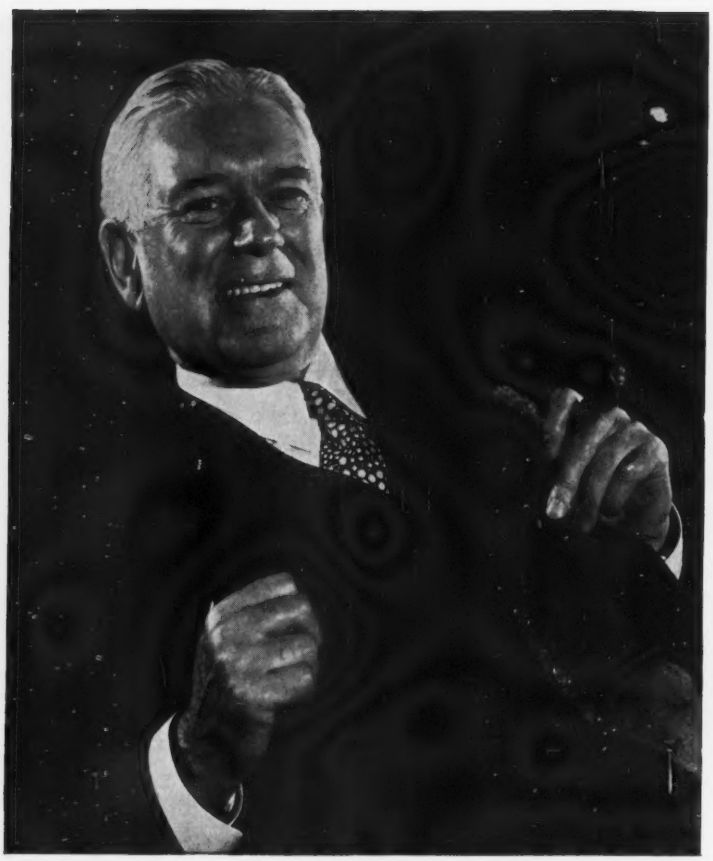
FULD BROS.®

SELLING JOBBERS ONLY!

702 South Wolfe Street — Baltimore, Maryland

Sales Offices: • Seattle • San Francisco • Kansas City • Boston • Brooklyn

"I'm Satisfied"



CYCLAMAL

HAS SOLVED MY PROBLEM

Cyclamal the accepted basis for Floral Perfumes has answered the question.

Of great strength it is 5 times stronger than Hydroxy Citronellal with which it blends well. Result: Economy.

The only value I receive from money expended in perfuming my product is the value at the time of its ultimate consumption.

CYCLAMAL is a single chemical having the properties most desired by the perfumer.

Persistence in Odor

Result: The assurance that your product will reach the consumer properly perfumed and that your expenditure for perfume has not been wasted.

Freedom from Irritation

Result: Permitting its use in Cosmetics as well as Soap and Perfumes.

Freedom from Discoloration

Result: No worries about returned goods from this cause. Cyclamal is of 100% Purity.

Requests for Samples on Your Firm's Letterhead Will Be Promptly Answered.

Aromatics Division

GENERAL DRUG COMPANY

644 Pacific Street, Brooklyn, N. Y.

9 SO. CLINTON STREET, CHICAGO TRANSPORTATION BLDG., LOS ANGELES

1019 ELLIOTT ST., W., WINDSOR, ONT.

Volume XVII Number 12

SOAP and SANITARY CHEMICALS

Reg. U. S. Pat. Office

DECEMBER 1941

SANITARY Products Section, which forms a part of every issue of SOAP, begins on page 79.

Contents

Published by

MAC NAIR-DORLAND COMPANY, INC.

254 WEST 31st STREET NEW YORK, N. Y.

Subscription rate, $3.00 per year. Foreign, including Canadian, $4.00. Copy closing dates--22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Reentered as second-class matter, Feb. 9, 1938, at Post Office, New York, under act of March 3, 1879. Mail circulation, November, 1941, issue, 3,772 copies. Total circulation, 4,000.

IN DEFENSE ☆

National defense today is a thousand things besides a man with a "musket." It is every *minute* of every man on the job of producing material, machines, equipment and supplies. It is physical fitness for work. It is public health, which we are helping protect through strict, sanitary cleanliness in every place where people gather. This is the essential service of our industry. Our company's service to you as distributor, is the production of controlled-quality soaps, cleansers, waxes and sanitary supplies — for uniformly efficient performance and greatest economy.

THE DAVIES-YOUNG SOAP COMPANY, DAYTON, OHIO

SANITARY SUPPLIES INCLUDING THE FOLLOWING PRODUCTS

LIQUID TOILET SOAPS
- Buckeye Concentrated
- Gem Concentrated Base
- Buckeye Surgical Soap
- Buckeye Infants Soap
- Buckeye Castile
- Tincture of Green Soap

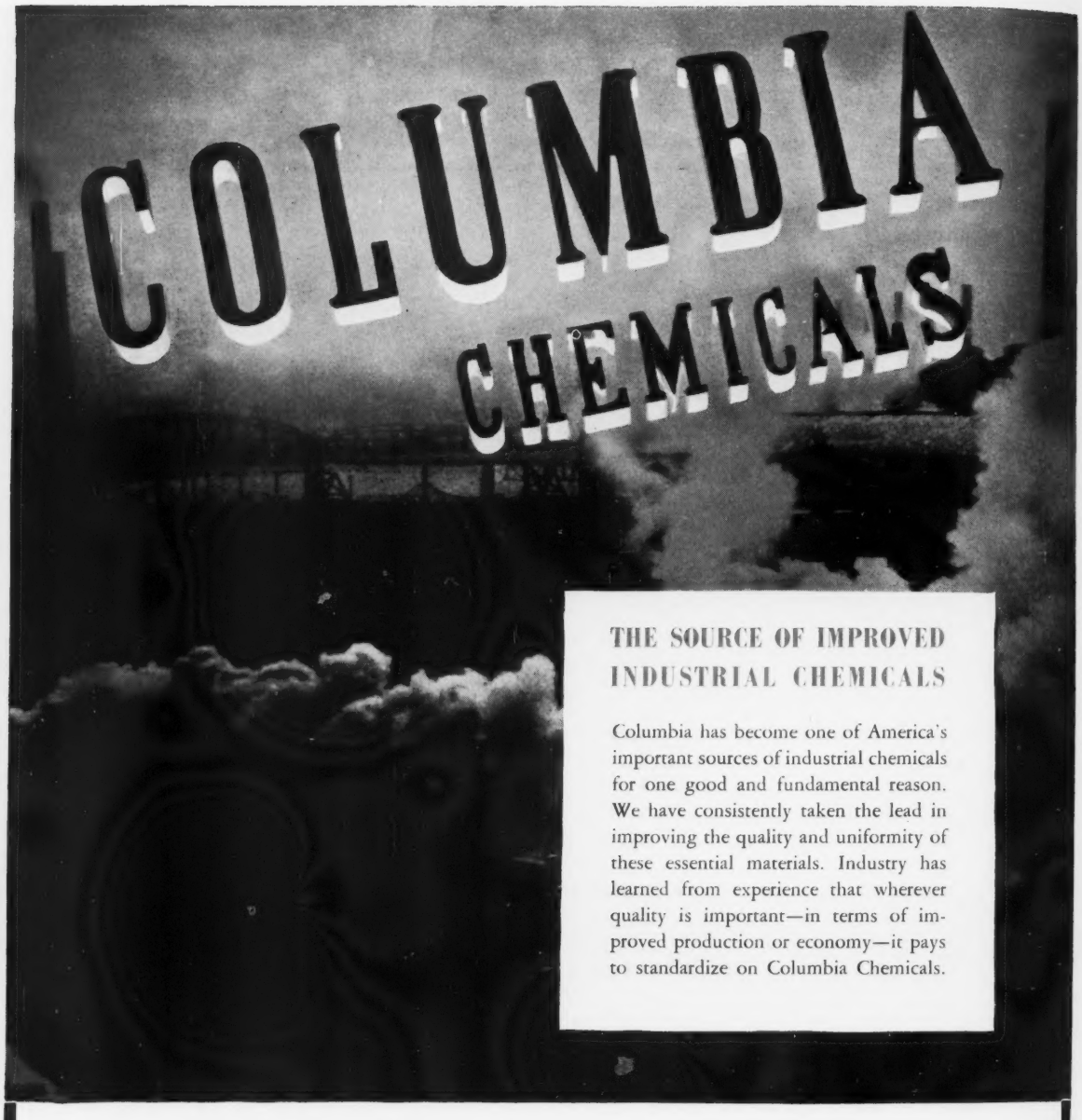
DEODORANT BLOCKS AND CRYSTALS

TOILET, SHAMPOO BASES
- Buckeye Coconut Base
- Gem Concentrated Base
- Buckeye Castile Base
- Buckeye Crystal Base

DISINFECTANTS
- Buckeye Pine Oil
- Coal Tar Disinfectants
- Cresol Compound U. S. P.
- Buckeye-Cres.

HOUSEHOLD SOAPS
- Whiz Hand Soap
- D-Y Cleaner

INSECTICIDES
- Buckeye Fly Spray
- Odorless Fly Spray
- Moth Spray
- Contact Insecticide
- Gem Roach Powder



ESSENTIAL INDUSTRIAL CHEMICALS

SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • LIQUID CHLORINE
SILENE • CALCIUM CHLORIDE • SODA BRIQUETTES • MODIFIED SODAS
CAUSTIC ASH • PHOSFLAKE • CALCENE • CALCIUM HYPOCHLORITE

COLUMBIA
COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY

Columbia Chemical Division

30 ROCKEFELLER PLAZA

NEW YORK, N.Y.

Chicago • Boston • St. Louis • Pittsburgh • Cincinnati • Cleveland • Minneapolis • Philadelphia • Charlotte

New for '42

HY·O·LAN

SUPER DUTY HAND SOAP WITH LANOLIN

READY FOR SALE AND DELIVERY NOW!

A DOUBLE-BARRELLED NECESSITY FOR THE DEFENSE MARKET...

THE NEED

1) Every defense worker needs to clean his hands. Today, in your community, there is a record number of workers—with hands to clean. 2) Women are pouring in to industry. They wash up more often than men. This has multiplied the demand for a heavy duty soap—*that protects the hands.*

THE MARKET

The market is HERE and NOW. In factories, shops, arsenals, ships at sea, garages, paint shops, printing houses, schools, mills, hotels . . . it's the biggest, steadiest, fattest market in the whole sanitary field—and you can deliver HY-O-LAN NOW.

THE PRODUCT

HY-O-LAN is a heavy duty, free lathering, powdered soap which quickly removes grease, grime, carbon, paint, etc. . . . and leaves the skin soft and smooth—thanks to *lanolin*—which has been added to win for you the big new hand cleaner market, opened up by women in industry.

★ ★ ★

To Hysan's policy of "Sell 'em what they want most," we now add "and what you can ship immediately." That's the story of HY-O-LAN — new for '42 — available in cans, pails, drums and barrels — and destined for sensational sales acceptance . . . . . as proved in sixty days sales tests in three major markets. Write today for sample of this double barrelled money maker.

HYSAN — SHIPS IT FASTER — PROTECT YOUR LABEL HYSAN QUALITY

HYSAN

MANUFACTURING CHEMISTS

HYSAN PRODUCTS CO.,
58 E. Cullerton St., Chicago
Send us free HY-O-LAN sample and data.

FIRM .....

CITY .....

STREET ..... BY .....

S 12 41


FECTS

AREFUL COMPOSITION

Creating successful effects in photography is a matter of "composition"—the correct arrangement of light and darkness, proper balance of tones and shades. Imagination and special knowledge of technical details are required to achieve outstanding results in this art. And the successful composition and arrangement of odors, too, call for an equal degree of imagination, artistry and technical knowledge.

At Givaudan, the art of arranging odors to obtain successful composition has been developed to an unusual degree. The skill of Givaudan's perfume and odor chemists is *advanced* skill, based on *advanced* knowledge. And what makes it of great value to the manufacturer of perfumes and cosmetics is the special understanding these chemists have of consumer tastes and preferences. Givaudan odors are not only blended for technical correctness, but for basic popular appeal. The number that has found favor in the market is constantly increasing. Leading perfumers and cosmetic manufacturers turn to Givaudan for aid in the creation of odors for all types of products—toilet waters, colognes, powders, creams, lipsticks, suntan lotions, bath salts, and others. Of particular utility are the Givaudan specialties, which may be used in complete lines to create a family effect.

Let Givaudan's staff help you adapt your line to new and changing demands. Outline your problem and ask us for suggestions. Our extensive laboratory facilities are at your service.

GIVAUDAN-DELAWANNA, INC.

330 WEST 42ND STREET, NEW YORK, N. Y.

Will you save a life?

NOT many of us can be spectacular heroes. Yet by buying Christmas Seals you save human life just as surely as if you had plunged into a burning building!

More people between the ages of 15 and 45 die from tuberculosis than from any other one disease. By using Christmas Seals you make possible a year-round campaign against this pestilence—a campaign that since 1907 has reduced the tuberculosis death rate 75%!

Help save more lives in 1942!

Buy CHRISTMAS SEALS

The National, State and Local Tuberculosis Associations in the United States

Du Pont Aromatics

FOR SOAP MANUFACTURERS

Alcohol C-8
Alcohol C-10
Alcohol C-12
Alpine Violet
Amyl Salicylate
Anisic Alcohol
Anisic Aldehyde
(Aubepine Liquid)
Astrotone
Benzophenone
Benzyl Acetate
Benzyl Alcohol
Bergamot Artificial
Citral
Coumarin
Dimethyl Anthranilate
Dimethyl Hydroquinone
Geraniol
Geranium Artificial
Geranyl Acetate
Hydroxycitronellal
Indole
Iso Amyl Benzyl Ether
Isoborneol
Isobornyl Acetate
Methyl Anthranilate
Methyl Para Cresol
Methyl Rhodione
Mugol (Dimethyl Acetal of
Hydroxycitronellal)
Musks, Artificial
Rhodione
Skatole
Terpineol
Terpinyl Acetate

● We welcome your inquiries for aromatic chemicals, including those listed above. The many Du Pont manufacturing facilities are constantly being expanded to provide a uniform high quality and a dependable source of supply. Why not standardize on Du Pont chemicals?

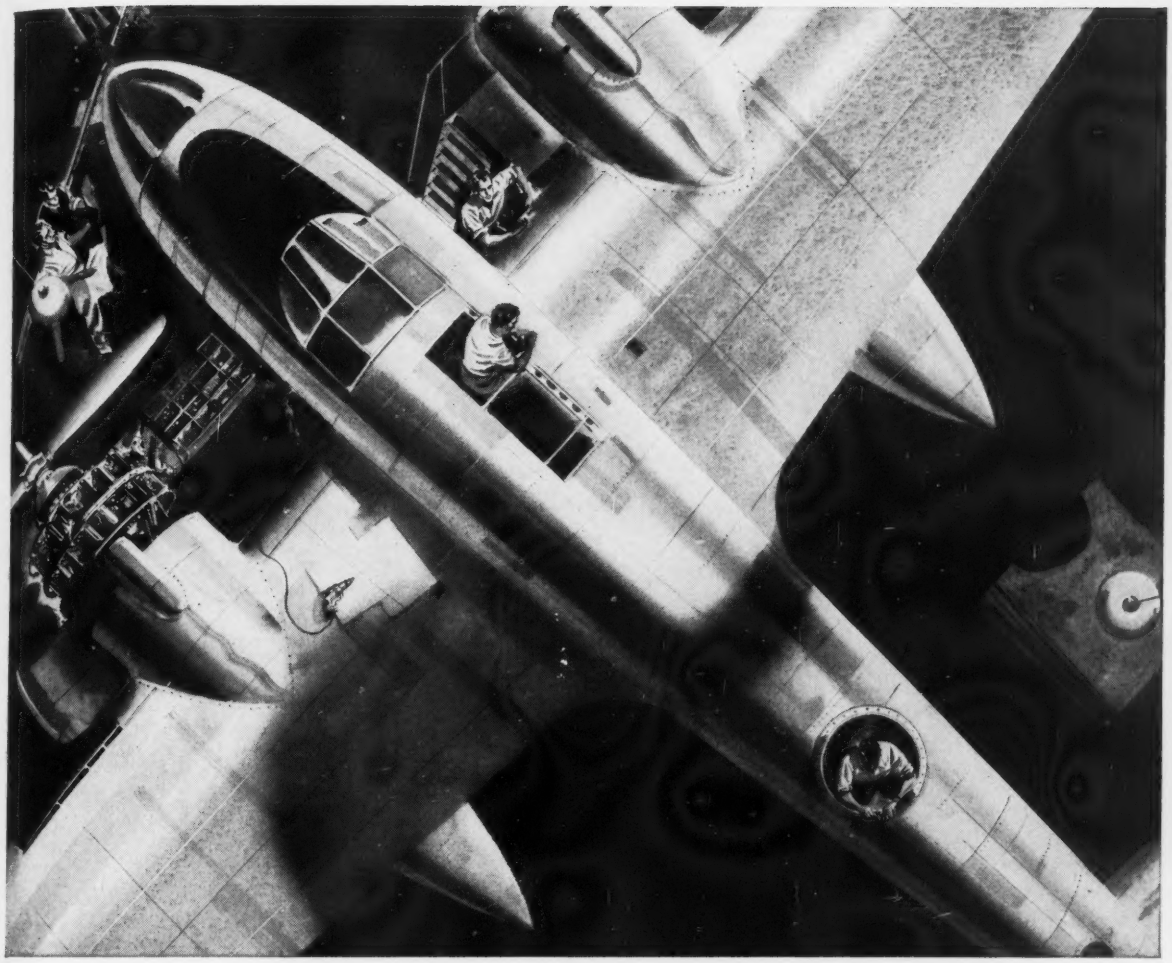
DU PONT

REG. U. S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO. (INC.)

ORGANIC CHEMICALS DEPARTMENT, FINE CHEMICALS DIVISION
WILMINGTON, DELAWARE

40 WORTH STREET, NEW YORK CITY **7 SO. DEARBORN STREET, CHICAGO, ILL.**



The tin can enlists for the duration

How Changes in America's Most Widely Used Containers Are Aiding National Defense.

YES, the tin can has "joined up." In fact, some of these containers will soon be appearing in new "uniforms."

The reason is this: Tin is one of America's most vital defense materials. To conserve this country's essential reserve supply of tin, the research scientists of the can makers' industry have developed and perfected changes in tin containers that will effect tremendous savings in this vital defense metal.

Take the coffee can, for instance

The vacuum-packed coffee can will soon look slightly different. Its top and bottom are now being made of an enameled steel rather than the tin-plated steel formerly used. This change enables us to make a considerable saving of the tin normally used for coffee cans without sacrificing their ability to guard the freshness and flavor of your coffee.

Food cans, paint cans, oil cans

Practically every other tin container also has undergone changes, each according to its use and contents. An 80 per cent lead coating, instead of the usual lead and tin coating, is being used on cans for such things as paint, oil, gasoline.

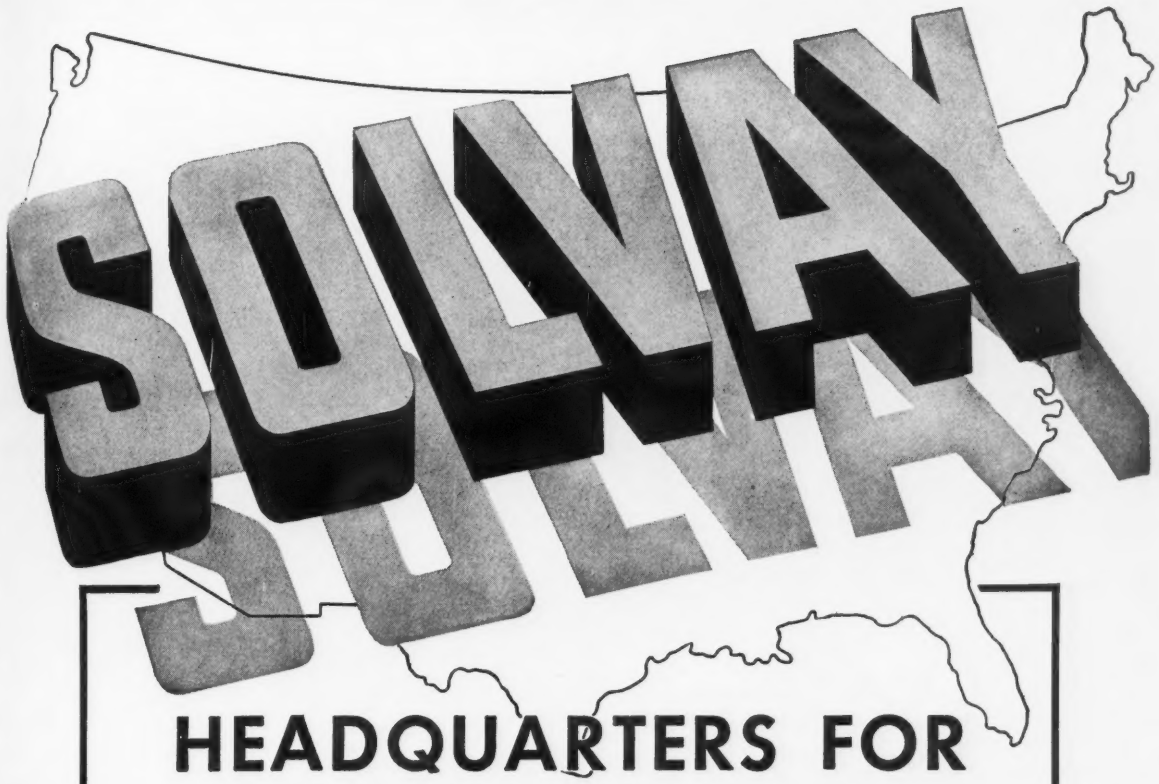
On food cans, the tin coating has been reduced 10 per cent. Today's better, higher-grade steels make this possible. (*Note:* The tin coating on food cans prevents rust on the outside and enables the side seam of the can to be soldered at high speed. It has never had anything to do with the wholesomeness of the food in the can.)

And through these changes you will be proud to know the can makers of America are conserving millions of pounds of tin a year.

And this tin—which has been saved—is now going straight to industries which are turning out the ships and planes and guns that will defend America! This is just a beginning. As rapidly as our laboratories can perfect new changes, new tons of tin will be diverted to defense.

* * *

AMERICAN CAN COMPANY
230 Park Avenue, New York, N. Y.



HEADQUARTERS FOR

ALKALIES

and related products

Soda Ash
Caustic Soda
Causticized Ash
Modified Sodas
Calcium Chloride
Liquid Chlorine

60th ANNIVERSARY
1881 ★ 1941

Ammonium Chloride
Caustic Potash
Potassium Carbonate
Para-dichlorobenzene
Para-Baco*
Sodium Nitrite

* Trade Mark Reg. U. S. Pat. Off.

SOLVAY SALES CORPORATION

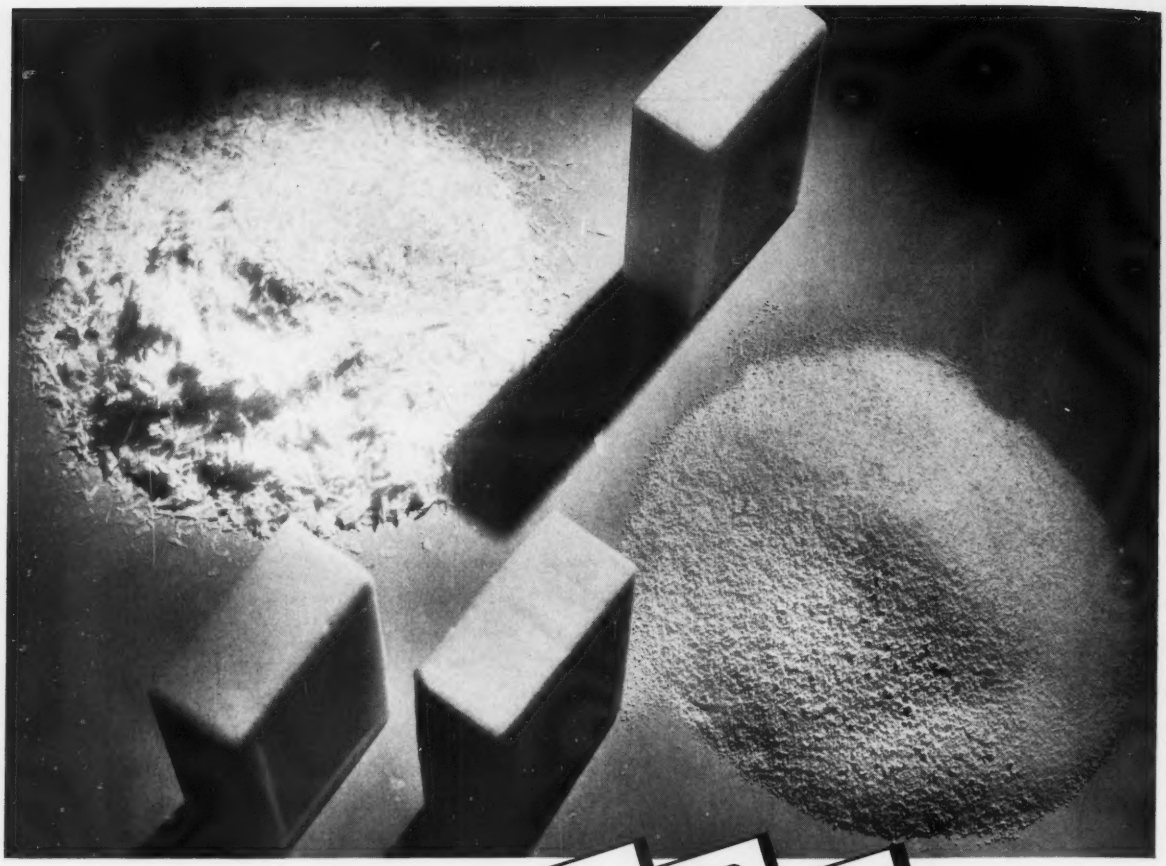
Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET • NEW YORK, N. Y.

BRANCH SALES OFFICES:

BOSTON • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND • DETROIT
NEW ORLEANS • NEW YORK • PHILADELPHIA • PITTSBURGH • ST. LOUIS • SYRACUSE

PLANTS LOCATED AT: SYRACUSE, N. Y. • DETROIT, MICH. • HOPEWELL, VA. • BATON ROUGE, LA.



for Soap in FLAKE BAR or POWDER *form*

STANDARD SILICATES

add Potent Sales Values

Four ways in which STANDARD SILICATES can add sales value to your soaps are:

✓ IMPROVED KEEPING QUALITIES
A small percentage of STANDARD SILICATE retards rancidity of soap.

✓ EXTRA DIRT-REMOVING POWER
Your customers get cleaner, whiter washes with soap that contains Standard Silicate.

✓ BETTER SOAP FLAKES
You will have less fines and better bulk when small amounts of Standard Silicate are added in the making.

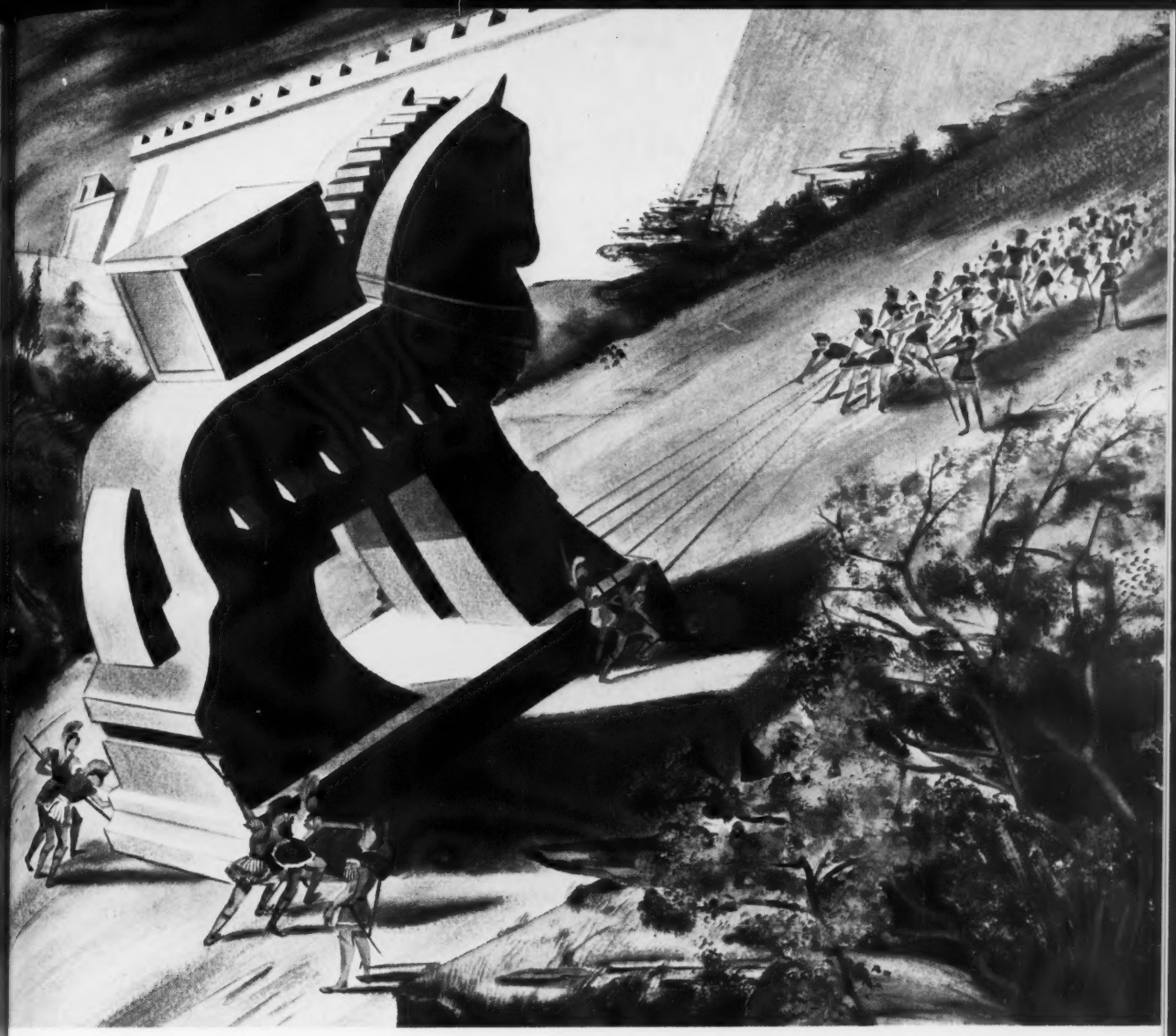
✓ MAXIMUM SUDSING POWER
Better action is obtained when Standard Silicate is present.

STANDARD TECHNICAL SERVICE will gladly work with you in correctly applying the right grades and amounts of Standard Silicates.

DIAMOND ALKALI COMPANY • Standard Silicate Division

Plants at CINCINNATI · JERSEY CITY
LOCKPORT, N. Y. · MARSEILLES, ILL.
DALLAS, TEXAS

General Offices • PITTSBURGH, PA.



Picture of a successful package

Ever hear of a man named Epeius? Fellow who lived about 3000 years go? He was quite a packaging expert.

Epeius created one of the most successful packages in all history—the Trojan Horse. The Trojans found a big handsome wooden horse outside their city, and just couldn't resist dragging it in. Later they found it was full of Greek soldiers.

Anyone interested in packaging could pick up a few pointers from the story of the Trojan Horse.

It was a successful package because it was made to fit a specific need. It was a practical package, too. Plenty of imagination went into it, yet it protected the contents and was easy to fill (and empty!). Did it have eye appeal? The Trojans thought so.

Developing successful packages for businessmen is Continental's business.

For 36 years we have been helping manufacturers find the right package for their product and adapt it for their specific needs. Our packaging experts have a wide variety of styles, shapes and sizes to meet every demand, no matter what the product may be. All are consumer-convenient.

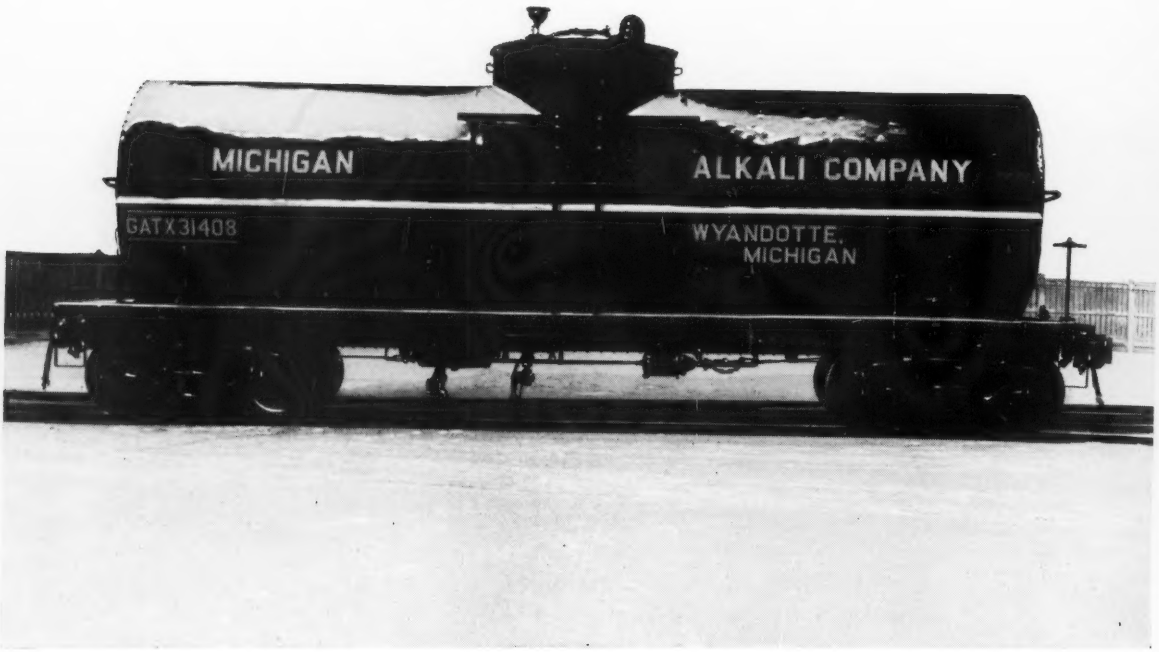
A lot goes into the making of a successful Continental package. Creative design ideas, skillful lithography, scientific research, well equipped laboratories, and sound merchandising.

Have *you* any packaging problem? Color? Design? Breakage? Shipping? Perhaps we can help. Just call for Continental.

CONTINENTAL CAN COMPANY

New York Chicago San Francisco Montreal Toronto Havana

WINTER-PROOF



. . . for Liquid Caustic

You are looking at the most modern carrier of liquid caustic soda in the chemical industry—a Michigan Alkali tank car.

Lined with Michigan Alkali's caustic-proof lining, having the heaviest insulation in use, the Michigan fleet permits the highest loading temperatures. . . . This guarantees that caustic shipments arrive in completely liquid condition in any weather; the car is ready for unloading upon arrival. (No steaming or thawing necessary—outlet legs are steam jacketed—ready to open.)

And when the shipment is unloaded the caustic will be found to be up to your individual specifications, uncontaminated by iron.

Michigan Alkali produces the widest range of caustic types available.

MICHIGAN ALKALI COMPANY

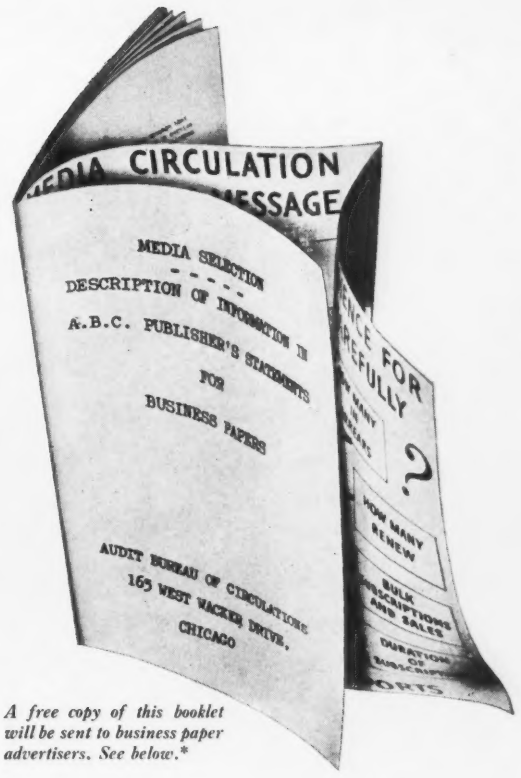
FORD BUILDING, DETROIT, MICHIGAN

NEW YORK • CHICAGO • CINCINNATI • ST. LOUIS • WYANDOTTE

DISTRIBUTORS IN ALL PRINCIPAL CITIES • *MANUFACTURERS:* SODA ASH
CAUSTIC SODA • BICARBONATE OF SODA • CHLORINE • CALCIUM CARBONATE • DRY ICE

TO Advertisers–

HOW OUR MEMBERSHIP IN THE AUDIT BUREAU OF CIRCULATIONS PROTECTS YOUR ADVERTISING INVESTMENT.



*A free copy of this booklet will be sent to business paper advertisers. See below.**

THE Audit Bureau of Circulations is a cooperative and non-profit association of more than 2000 publishers, advertisers and advertising agencies.

The Bureau has established definite standards for measuring circulation on a quantitative basis for qualitative appraisal. Its reports provide information that advertisers need in order to select the right media. And they give buyers assurance that they get what they pay for.

Skilled auditors make a detailed annual audit of the circulation records of each publisher member. Based on these audits, the Bureau issues A. B. C. reports which tell how much circulation a publication has, where it goes, how it was obtained, how much subscribers paid for it, their occupation and business, and many other facts essential to the wise investment of advertising money.

Only publications with paid circulation are eligible for membership in the Bureau. The net paid circulation shown in A. B. C. reports is evidence of reader interest.

A. B. C. PROTECTS YOUR ADVERTISING

Paid subscriptions, renewals, evidence of reader interest, are among many facts in A. B. C. reports that are definite guides to effective media selection. When you buy space in A. B. C. publications your advertising is safeguarded by audited circulation. Always ask for A. B. C. reports.

*How to make the most of the information in A. B. C. reports for business papers is described in a booklet on media selection which has recently been issued by the Bureau. It outlines in detail the helpful information that will enable you to select the right media and know that you are getting what you pay for. Write today for your free copy of this booklet.

SOAP *and Sanitary Chemicals*

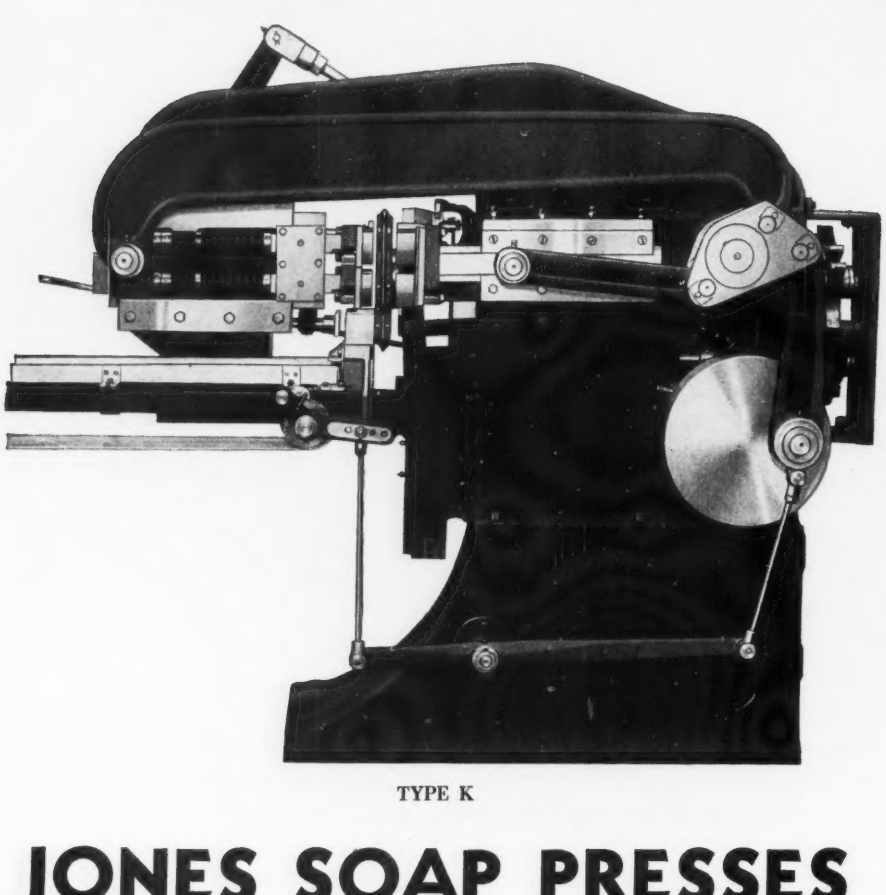
254 WEST 31st STREET NEW YORK

Member of the Audit Bureau of Circulations ABC *Ask for a copy of our latest A.B.C. report*

A. B. C. = AUDIT BUREAU OF CIRCULATIONS = FACTS AS A MEASURE OF CIRCULATION VALUES

. . . laundry soaps too

. . . sell better if they look better



TYPE K

JONES SOAP PRESSES

. . . insure for your laundry soap that finished appearance which connotes fine quality . . . turn out 90 to 140 cakes per minute . . . run to capacity by one operator . . . toggle operated, hence powerful, perfect pressing without noise or vibration . . . results and economies which you cannot obtain with presses of obsolete vintage . . . yes, sir,—laundry soaps as well as fine toilet soaps need the sales advantage of good looks . . . JONES modern toggle operated PRESSES are the answer.

R. A. JONES & CO.

Incorporated

P. O. Box 485 Cincinnati, Ohio

The Standardized *Constant Motion* and *Nova Motion* Cartoners package bottles, jars, tins, collapsible tubes and many other articles. They feed, fold and insert direction sheets and corrugated board liners with the loads.

AS THE EDITOR SEES IT

PRESSURE from the grocery trade has finally brought leading soap manufacturers to the point where they will eliminate many premiums, special deals and one-cent sales after January first. For several years past, the grocers have been protesting against special deals, and particularly against premiums handed out over the counter at the time of sale. This has been true in the case of numerous foodstuffs as well as soaps. The practice which spread widely became such a nuisance some time back that there were threats from some grocery groups that they would refuse to handle products involving a spot premium not included directly in the package. Now, these and other nuisance deals are to be dropped. The move is to be commended, and the practice, we hope, never revived.

THE price ceiling on glycerine set by the OPA last month is, according to a number of smaller soapers, too low. In dropping the price of crude glycerine and setting the ceiling at 11½ cents, the rank and file of soapers claim that most of the incentive to produce crude has been removed. There was even talk of running glycerine lyes down the sewer. They claim that today the country needs every pound of glycerine which can be produced and that this move by the OPA will stymie maximum production.

Good prices for glycerine have always brought out increased production, just as in times of low prices, output has dropped. It is conceivable that in the present emergency, any marked cut in the previously prevailing level for crude or refined might be a mistake. To drop crude, for example, from the figure around 16 cents at which it was selling and to set the ceiling at 11½ cents, appears to be a rather drastic move under present conditions. Maybe a figure half way between would have been a wiser selection.

For the past year, the differential between crude prices and those for the refined grades has been too small, if we may judge from the angle of the producers of refined. It has been held that all the profit in the glycerine business has been going to those soapers who produce and sell their crude, and at the prevailing levels for crude, there was little left for refining costs. It has been stated also that even at the newly established ceiling, there is an ample margin in crude production to warrant pushing recovery operations to the limit.

These are the two sides of the picture. That the producers of crude are angry at the low level of the ceiling price is only natural. But there is little that can be done about it except to wait and see how glycerine production and the glycerine market are affected by this latest price fixing move.

LIQUID soap is being sold in too many sizes and shapes of containers, and it is about time that manufacturers shut down on jobbers and others who demand all sorts of odd-size packages. As far as we can see from some years of observation in the industry, there is no excuse for any more than five sizes for liquid soap packages.

These are the standard 55 gallon, 30 gallon and 15 gallon drums, and one and five gallon cans. Such sizes as 65, 70, and 75 gallon drums, and even 20 and 40 gallon drums are distinctly in the class of nuisances. They have no place today, especially with steel drums and other containers difficult to secure under any conditions.

The odd sizes serve no useful purpose, and, as far as we can see, are used by some distributors chiefly to trick buyers into taking more soap than they want,—a specialty of the one-time order taker where the chance of repeat business is remote. Right now, the opportunity presents itself to eliminate "trick" sizes in containers,—an opportunity which all liquid soap manufacturers, who have not already done so, should seize without delay.

ALTHOUGH there is promise of some easing in the scarcity of sodium fluoride, the difficulties of securing adequate supplies of the nile blue material for insecticide use during the past year emphasize the need for changing color requirements for fluorides and other economic poisons. Where a specification or law or regulation calls for any one specific color, any unusual market situation such as we have had for the past year can cause insecticide manufacturers much unnecessary trouble. After all, the aim of coloration is to protect the public against accidental poisoning, and in doing this, one distinctive color, as long as it resembles no foodstuff, is as good as another. We feel that regulations should not call for any specific color, but should merely specify "distinctively colored." In normal times, this coloration will of its own accord become standard for the various groups of economic poisons among chemical manufacturers, while in times of stress and shortage, a leeway in coloration will save insecticide manufacturers many a headache. It is our belief that those laws which call for definite colors for various types of economic poisons should be revised to specify "distinctively colored."

COMPULSORY formula disclosure on labels,—this old problem is constantly raising its ugly head to leer at manufacturers. If it is not the Federal Trade Commission demanding formula disclosure, it may be some state or municipality, as year after year, the pressure for full formula disclosure on labels of chemical specialties, as well as foods, drugs and the like, appears to increase. As government, both state and federal, attempts to tighten its control of business in every direction, there is a corresponding spread in the demand for full formula disclosure.

Theoretically, the object of formula disclosure is to protect the public. Actually, it does not work this way, as every manufacturer knows, but acts principally to give to unscrupulous competitors the very information which they want,—the complete formulas of successful products. And why place in the hands of the chiseler facts which may have a background of years of research and the expenditure of large sums of money by reputable manufacturers? What of all this talk about doing things in "the American way"? Is it the "American way" to permit free and easy theft of a manufacturer's formula under the guise of protecting the public?

Formula disclosure, particularly on labels of detergents, soaps and chemical specialty items, deserves only bitter opposition from manufacturers. Even filing of formulas with public officials carries no complete assurance of protection of the rights of the manufacturer. And as far as we can determine after checking into the matter for a number of years, formula disclosure is little or no protection to a public which in nine cases out of ten does not know what the formula means after reading it.

New angles on POWDERED SOAPS

By Dr. E. G. Thomssen

J. R. Watkins Company

KEEN competition in the sale of soap products is the greatest urge toward constant improvement in all soaps. Research in the soap field, it has been said, has lagged behind that in other fields. To some extent, this may be true, although soap manufacture has not been without marked quality improvement in recent years. As a stimulus to increased use of all types of soap products, there is no doubt but that constant improvement is important,—and particularly so when the improvements are such as to provide fuel for advertising. Numerous instances of extensive advertising campaigns based upon soap improvements have been noted during the past several years.

Many battles for expansion in soap sales, and in some cases for very existence, have been fought out through these advertising skirmishes in newspapers, magazines, radio, billboards, and house-to-house sampling campaigns. Where there is a definite improvement on which to base the advertising campaign, it is likely to be much more effective than otherwise. Not only have the soapers competed with one another on their soap products, but they have likewise competed by the introduction of wetting agents in competition with soaps for general cleaning purposes and for use in beauty, shampoo, and dental preparations. It is an interesting and expensive warfare to witness from the sidelines.

Powdered soaps represent only a very small fraction of the soap consumption of the country. By powdered soaps is meant that class of almost pure base soaps of various compositions, ground to a fine powder. As such, they are never advertised to and never reach the ultimate consumer in the home. They are wholly raw materials for the manufacture of other products, dentifrices, drug products, hand cleaners, or something altogether foreign to the field of detergency. And as such, they have been used for a number of years, and in them too, there has been a marked improvement in general quality if comparison is made with the powdered soaps of a decade or two ago. They too have not been immune from competition, and especially in recent years, the competition from wetting agents and non-soap detergents.

This more or less recent competition is only a natural development of similar conditions in the textile and laundry soap fields. There are perhaps certain advertising advantages in pointing out that lathering dental preparations, shampoos, lotions, and other preparations "contain no soap." In the case of a dental cream or tooth powder, particularly, certain people still abhor the use of soap in their mouths because in their youthful days their parents either threatened to or actually washed away "cuss" words that issued from their mouths. Wetting agents do not as yet have that stigma upon them, so here at least they have the advantage over soap. It would be of interest to know how much soap has been replaced by wetting agents for household, as well as toilet uses. Such information as is available indicates that the inroads are not great because the per capita consumption of soap has increased from year to year. Possibly this is due to those benefits attributed to wetting agents that have not stood the test of the laboratory, or the taste and fixed habits of the consumer as much as their advertising represents.

Not only have wetting agents competed with those powdered soaps used in the cosmetic field but the amines, like triethanolamine, and more recently other amines, have been introduced to produce amine soaps in competition with soda soaps. There is no denying the fact that emulsions are prepared more satisfactorily with the amine soaps than with the powdered soaps used for a long time in making cosmetic lotions and emulsions.

In spite of the assault of wetting agents and amines, powdered soaps have continued to find increased uses in the various industries. The reason for this probably is that soap has properties not possessed by the competitive products. These are lower cost, greater bulk, it jells more readily with water and other solvents, produces a more permanent and thicker lather, and under certain conditions greater slip. The disadvantages of soap are the formation of lime soaps and decreased lather in hard water, greater quantities required to produce a lather, less stability and reduced solubility under certain conditions and greater variation in composition.

"Powdered soap" in the soap trade means an almost pure anhydrous soda soap in the form of a fine powder form. Until the U. S.

Pharmacopoeia XI appeared in 1936, olive oil castile soap was the only official soap in solid or powdered form permissible for use in U.S.P. preparations. In this revision, *sapo durus* or hard or soda soap became official. It is no longer necessary, then, to produce U.S.P. powdered soap from olive oil. The tests for purity of the present U.S.P. soap are essentially the same as those previously established for castile soap. The main change in specifications lies in the iodine value of the combined fatty acids which in U.S.P. X could not be less than 84 nor more than 90. The latitude has now been broadened somewhat so that the iodine value must lie between 83 and 92. The solidifying point of these fatty acids must lie between 18° C. and 20° C. and the acid value between 185 and 205 to be official. These standards eliminate certain powdered soaps on the market which find large use in non-official, pharmaceutical and other preparations. The pharmaceutical industry consumes quantities of powdered soap but powdered soaps find even larger use in dental preparations, cosmetics, shampoos, testing water hardness, wire drawing, shoe polishes, Kosher cleaners, the baking industry, and elsewhere.

Four types of powdered soaps are found on the market. These are olive oil castile powder, coconut oil soap powder, neutral white soap powder and palm oil soap powder. Castile soap powder is either white or greenish in color and has the faint, characteristic odor of olive oil soap. Its taste is bland and it is soluble in both alcohol and water. It does not possess very great congealing power or ability to jell with water and alcohol. The lathering qualities of the soap are only fair and unless very carefully manufactured, the soap is susceptible to rancidity. Once rancidity has set in, it continues rapidly, and cases are on record where the reaction has proceeded so rapidly with the generation of heat actually to cause the soap powder to char. In some cases, oils other than olive are used to make castile soap, hence olive oil castile soap should always be specified if an olive oil soap is required.

Coconut oil soap powder is not generally used except for shampoos. This soap is difficult to dry because of its low titre. Also, it is not readily pulverized. It is white in color, practically odorless, soluble in alcohol and water, has a very excellent lathering quality, but unless thoroughly saponified is susceptible to rancidity. Its congealing power or jelling property is low. Its taste is very soapy.

Neutral white soap is made from a combination of high-grade tallow and coconut oil. It is white to cream in color and possesses practically no odor. The taste is soapy and it is less soluble in water and alcohol than either castile or coconut oil soap. It is less susceptible to rancidity and possesses good power to congeal with water or alcohol. As it is made of a combination of a fat and oil, it is possible to control the titre within wider limits than is the case with coconut oil or olive oil soaps.

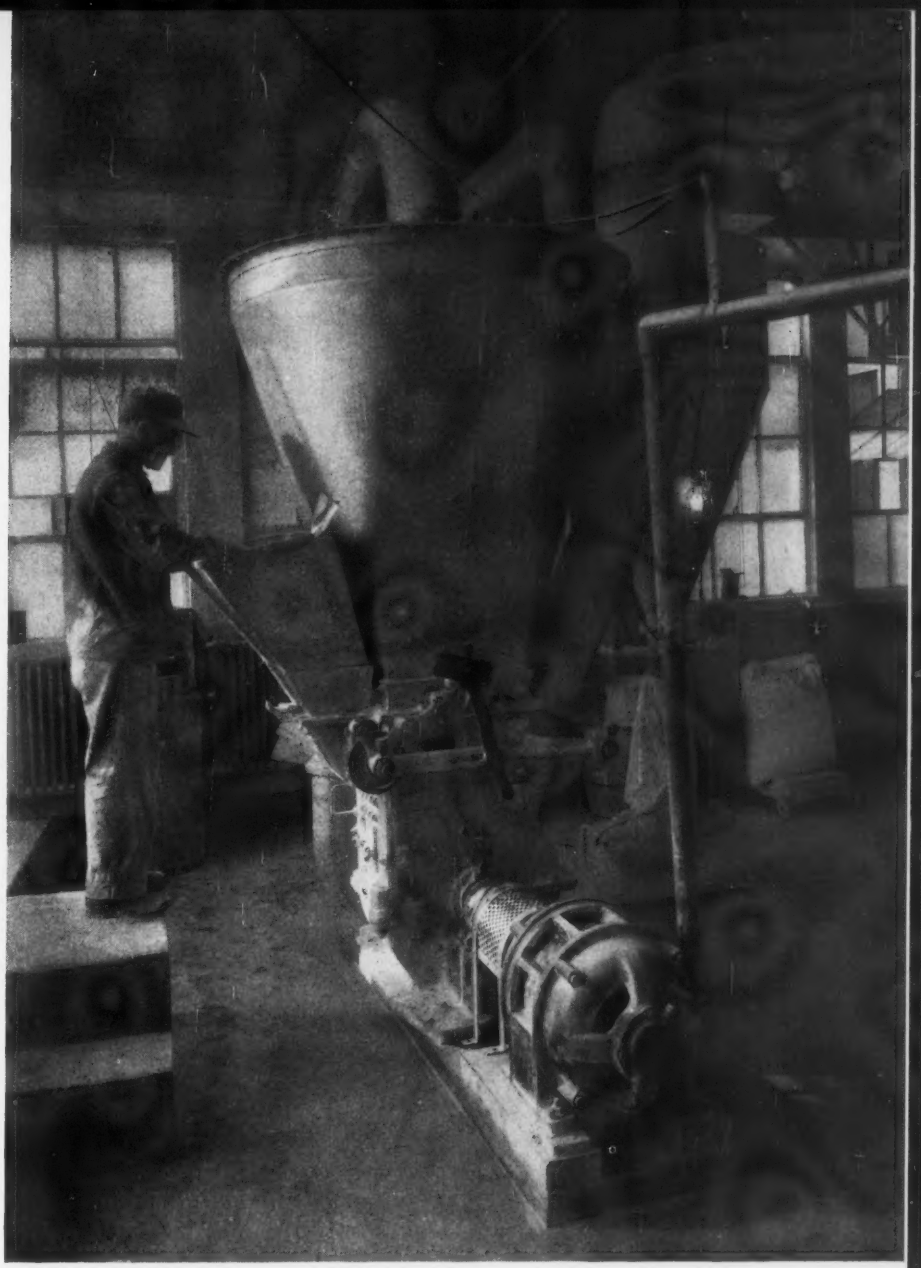
Palm oil soap powder is cream in color and is usually made from high-grade bleached palm oil. It has an odor faintly characteristic of orris or violets and a taste somewhat reminiscent of nuts. As the titre of this soap lies about in the same range as that of neutral white soap, it has the power to form a jell about equal to that possessed by neutral white soap. It is not readily susceptible to rancidity and offers no difficulty in drying or grinding.

For the manufacture of any powdered soap it is very important that the highest grade of raw materials, except possibly in the case of castile soap, be used and that the saponification process be carried out very carefully. In the past the manufacture of olive oil soap by the half-boiled process has sometimes resulted in considerable rancidity. In the case of coconut oil soap, it is important to have an excess of free alkali rather than free fat if the soap is made by the cold or semi-boiled process. In the actual boiling of the soap, the possibility of rancidity, off-color, off-taste due to impurities and poor odor must be particularly watched. These soaps should represent the purest finished soap obtainable and if careful methods of manufacture are not pursued, they are very apt to lead to difficulties later on in the products of which they are ingredients.

The percentages of free carbonate, salt, moisture, free alkali should all be kept to the minimum. When the soap is dried, it is advisable that the chips contain at least 97 per cent anhydrous soap. Thorough saponification of the fats and oils used is most desirable and for this reason the full-boiled process is usually followed. Fresh lyes rather than spent lyes should always be used in the soap kettle. The wash changes of which several are made should be so regulated as to remove as much glycerine as is possible during the boiling process. It is also desirable to make soap of this kind in smaller quantities rather than the usual larger quantities in making regular toilet soap base. The usual process of making soap by the full-boiled process is pursued but it is most desirable during the boiling process to adjust the various chemical constants through laboratory analysis so as to produce a uniform finished product.

AFTER the finished soap is obtained, it may be framed, but passing it through a continuous soap drier is the better procedure. Slow drying is imperative for proper grinding. The initial drying temperature should be between 90 and 110°F. depending upon the composition of the soap and the atmospheric conditions. It need hardly be pointed out that high titre soaps withstand a higher drying temperature than the low titre soaps.

If castile soap or coconut oil soap are dried in the automatic continuous drier, particular care is required. Under no circumstances should these soaps be overheated during the drying operation as discoloration and yellowing are very



apt to result. After the soap has been dried down to approximately 3 per cent moisture, the temperature should be considerably lowered and the chips stored in a small, well-ventilated bin or in bags and barrels. It is also important that the dried chips be stored in such a manner as to keep moisture from the soap, particularly during humid periods.

The grinding or pulverizing of soap is very important. Some manufacturers of powdered soap still use the so-called chaser mills in which the dry chips are ground on a round granite bedstone over the periphery of which roll two round, heavy, wide, wheel-like opposed stones, actuated by a revolving vertical shaft to which they are attached. When the soap powder has become sufficiently fine it is floated over a curb of sufficient height and gathered in the closed compartment in which the grinding stones are operated. This method is slow and cumbersome but produces a very uniform product of extreme fineness. This is the reason why it is still so extensively used.

High-speed attrition pulverizing mills connected with air separation are most generally used today to grind soap. In reducing the soap chips to powder, much of the mechanical energy is converted into heat. If this heat is not properly controlled, difficulty may arise in producing a discolored soap powder. It is advisable that an open-circuit system of collecting the pulverized soap be employed when this method of grinding is used. A large volume of air should be brought into contact with the soap so as to keep down the temperature. There is an additional advantage in using this large flow of air because the soap loses its moisture through the rapid air currents and thereby facilitates more rapid grinding and produces a better finished product. The cost of grinding depends upon the fineness to which the soap is reduced. In most cases it is desirable to grind to 150 mesh or finer. As the mesh increases in fineness, the output of the mill is considerably decreased compared to the more coarsely-pulverized soap.

As has already been said, in an open circuit type of mill, air separation by the use of a cyclone elevated to the proper height is desirable. The air intake should be arranged so that it may be taken from either inside the grinding room or from outside the building whichever condition is the more desirable.

Since soap powder is irritating to the mucous membranes and the eyes, a proper type of dust collector should be used. The most satisfactory type is one which employs an enclosed solid bank of cloth screens. This series of screens is mounted on wooden frames in a dust-tight case equipped with hoppers at the bottom. The screens are all closed off at the bottom on all four sides leaving a small opening vent for the escape of the air. The dust-laden air from the mill enters the casing below the screens and

(*Turn to Page* 78)

Stabilization ...of WHITE MILLED SOAPS

By A.T. Fiore

Givaudan-Delawanna, Inc.

THE expanding market for white milled soaps, notably on the American continent, is undoubtedly based on the justifiable belief that they can be produced only from the best fats. Reported literature (1) on this point offers ample testimony to the importance of quality and limited number of fats suitable for white milled soap stock. Current practice restricts the choice to refined grades of tallow, cocoanut and related oils. Control, however, is not limited to the choice of fat since other factors require consideration for the satisfactory production and marketing of such soaps. To this end, considerable effort has been expanded by the soap industry towards retarding the conditions which promote such undesirable changes as those induced by rancidity and discoloration.

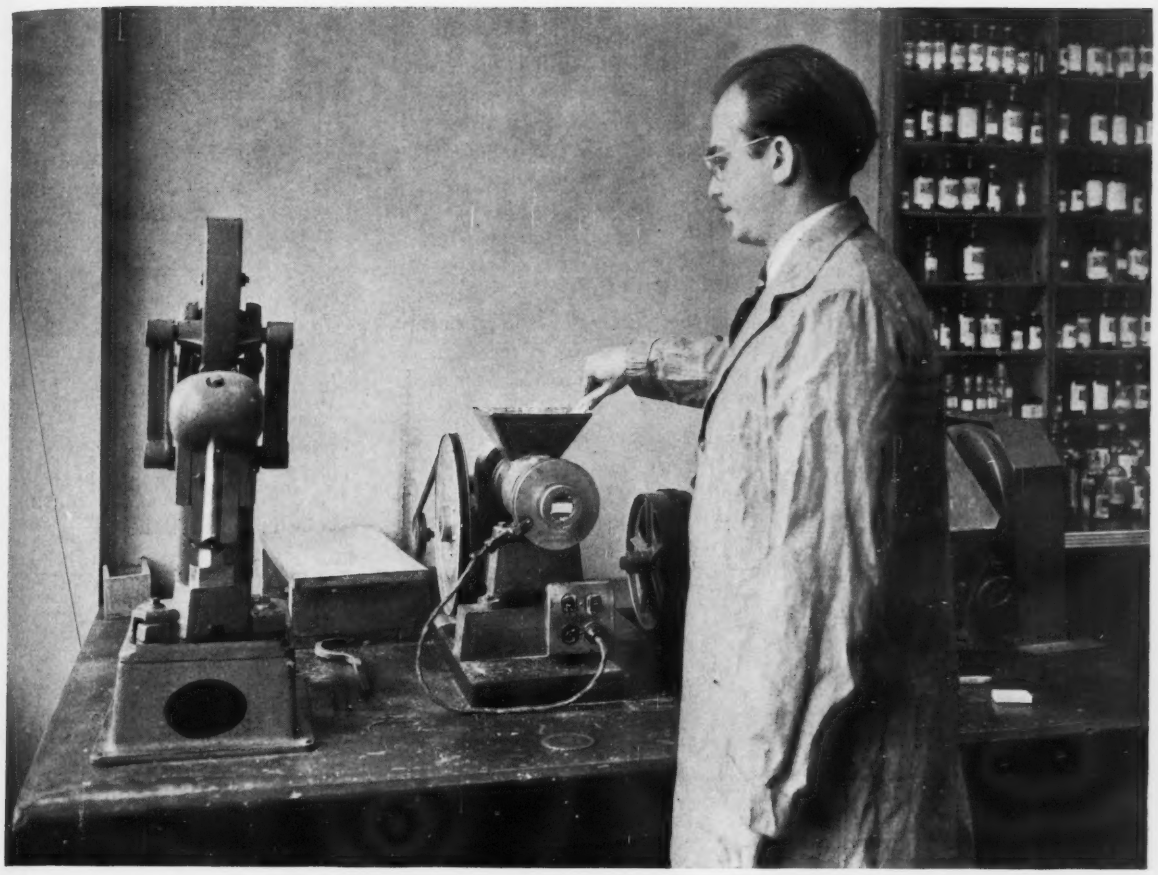
Periodically, isolated investigations and resumés (2) have appeared in addition to numerous patents which have, to some degree, confused the problem of satisfactory soap stabilization. In view of the recognized complications associated with the manufacture of white milled soap, the Givaudan soap laboratory has undertaken to review experimentally the application of the diverse chemicals recommended for stabilization against soap rancidity and their limitations, with special reference to their use in white milled soap.

In conducting the tests, crude No. 1 white milled soap, obtained from one of the leading soap manufacturers, made from edible tallows and cocoanut oil, was ground and milled with 0.1 per cent of stabilizing agent. Other concentrations are specified in the comparative tests. The resulting stabilized soap was then molded into soap samples weighing approximately 20 gms. each and heated in sealed jars at 55° C. in a special laboratory oven for a minimum of 150 hours under controlled humidity. Longer heating periods were used for comparative data. At the termination of each series of tests, the samples were removed for comparison of odor and color stability with blank or unstabilized soap. The tests yielded soap samples varying from a definite brown shade to pure white.

The method for comparing soap antioxidants as measured by the inhibition of discoloration is at present assumed to be a fair measure of the efficiency of the stabilizing agent. This empirical assumption is generally made in soap laboratories, since the inhibition of discoloration offers a good index of the utility of various stabilizers to the soap industry rather than a true measure of the rancidity inhibiting tendencies of soap antioxidants. Thus, various chemicals may inhibit evidence of rancidity in soap for a considerable length of time, only to induce a secondary discoloration resulting from colored products formed during the interaction of the stabilizer and soap in the presence of air or sunlight or both. Examples of such products include eugenol and conjugated ring compounds of the diguanides, e. g. naphthylamine diguanide and benzidine tetraguanides which are effective as rancidity inhibitors but are impractical in soap because of their tendency to impart an off-color or cast to white soap stock during storage. Similarly, various rubber antioxidants while partially effective as soap stabilizers can find only limited application in view of the high degree of secondary discoloration imparted to white milled soap.

It is therefore evident that antioxidants for soaps can only be measured by their practical utility rather than by theoretical considerations. The soap industry in its efforts to establish a practical basis for such investigations offers acceptance of the method by its general adoption throughout laboratories of the leading soap manufacturers. The method has been in use for the past decade or more and the results obtained after a 150 hour test are taken to be indicative of the change that soap undergoes during a one year storage period.

THE use of antioxidants in soap contributes considerably to the solution of manufacturers' problems of storage, marketing, and perfuming. Besides stabilizing the soap, they aid in stabilizing the perfume as well. As a general rule, soaps which have a decided tendency to become rancid (3) cannot be properly perfumed; similarly, soaps improperly stabilized decrease the utility period of the perfume. A satisfactory soap stabilizer should therefore act in the double capacity of soap and perfume stabilizer. Many chemicals which have been suggested for stabilization of soaps, such as paraformaldehyde and the majority of inorganic stabilizers, as well as such phenolic bodies as guaiacol, hydroquinones and cresols fail in this capacity since they do not afford a



In conducting the tests white soap was milled with various stabilizing agents and the sample cakes baked. The author is shown in the Givaudan laboratory.

satisfactory stabilization of perfume materials. In some cases, a decided interference with the perfume bodies is observed.

On the other hand, satisfactory stabilization may be observed in soaps with a definite series of aromatics, only to fail appreciably when an extension in application is attempted. This latter failing has necessitated numerous practices in the art of soap making, such as the use of special treatment with specific antioxidants for various soaps and often a change of stabilizer with a change in perfume.

For a satisfactory understanding of some obvious irregularities observed with antioxidants which were tested at various intervals with varying results, the following is offered as a partial explanation:

As it is the practice of a soap laboratory, not directly associated with its manufacture, to purchase quantities of crude soap for use in its tests over a period of several weeks, it is likely that despite a number of precautions, the soaps tested during the latter part of the storage period will have undergone some change toward rancidity; consequently, if an incipient rancidity has already begun in the soap, the same stabilizer can be expected to react differently than in an absolutely fresh soap. This difference in activity has been observed with a few of the phenolic type stabilizers. On the other hand, some chemicals act equally efficiently with soaps in either category.

To distinguish both of these types of antioxidant activity without unduly increasing the vagueness in the terminology of antioxidant activity, it is proposed to differentiate between stabilizers which act solely as rancidity inhibitors as distinguished from rancidity arrestors, the former including those chemicals which prevent rancidity when applied to freshly prepared soaps, wherein no evidence of oxidation or rancidity can be ascertained. The latter term, rancidity arrestor, should include those bodies which, when added either to fresh soaps or soaps already in some incipient form of rancidity, act with undiminished effectiveness in preventing further oxidation or rancidification. It is, therefore, apparent that some consideration should be given to the above differences in interpreting the results since absolutely fresh milled soap was not used for all tests. Differences in reported effectiveness of a given antioxidant can often be attributed to the distinction elaborated above.

Evaluation of Antioxidants:

THE following references with few exceptions are based on a comprehensive but unpublished report recently placed at our disposal. The evaluation and economic references to the groups of compounds disclosed are based largely on the

method disclosed. Briefly, substances which have been proposed or patented for the stabilization of soap fall into four general classes, including:

1. Metal precipitants
2. Natural antioxidants
3. Inorganic compounds
4. Organic compounds

I. *Metal Precipitants:* include zinc sulfide (4), methylene blue, sodium salicylate complexes, eugenol, alkali salts of lactic, tartaric and citric acids, dimethyl glyoxime, sodium hyposulfite, glutamic or aspartic acid, their alkali salts or hydrochlorides of the latter two (5).

The theory of heavy metal contamination in soap does not adequately account for the antioxidation activity of non-metal forming compounds; consequently, its application cannot be extended further than warranted. True, heavy metals contribute to rancidification of soaps, but they do not offer an adequate explanation for the failure of the majority of compounds listed above to afford satisfactory soap stabilization.

Although only traces of heavy metals are present in soaps, this contamination ranging from 1.5 to 20 parts per million, it has been found that approximately 0.5 per cent of zinc sulfide is required for stabilization. This is in considerable excess of the theoretical for metallic precipitation, yet concentrations of the sulfide approximating the amounts required for precipitation, offer no practical stabilization in soap. This is generally true for all inorganic type stabilizers, whether metal precipitants or not, resulting in relatively high concentrations varying between 0.25 per cent to 1.0 per cent, required for stabilization. The results of the tests indicate that inorganic compounds such as magnesium sulfate and magnesium trisilicate, to which no metal precipitating action is attributed, offer stabilization comparable with zinc sulfide. Glutamic and aspartic acids, while considered metal precipitants, are (4) considerably more effective than the others mentioned in concentrations of 0.1 per cent. Their use, in view of their excessive cost, is restricted.

II. *Natural Antioxidants:* Since the natural inhibitors present in fats and oils are either destroyed or rendered ineffective during the refining and bleaching processes (6), soaps made therefrom require the addition of antioxidants to compensate for the loss. The natural antioxidants such as lecithin (7), gossypol (8), carotin, tannins (9-10), sesame seed, hydrogenated sesame oil, and soya bean flour (11) have a greater application in the stabilization of neutral oils and neutral derivatives of such oils than in soaps. Their application to soaps is attended with undesirable secondary effects which preclude their practical use. The natural antioxidants mentioned above cannot be used with impunity. Smith (12) limits the use of lecithin in soaps. Tannins produce serious discolorations. Gossypol and carotin cannot be used in white milled soaps, while the addition of products such as hydrogenated sesame oil and soya bean flour is effective only in concentrations too high to be practical.

III. *Inorganic Compounds:* The application and classification of inorganic sulfur compounds as soap stabilizers is well defined in a recent patent (13) assigned to the Hooker Electrochemical Co. The authors classify various sulfur containing compounds into sulfiding agents such as elemental sulfur, hydrogen sulfide, sodium sulfide and hydrosulfide which have little or no antioxidant value; and antioxidants such as sodium sulfite, hydrosulfites, thiosulfates and sulfoxylates which may act either as antioxidants only, such as the sulfoxylates and sulfites or in the double capacity of antioxidants and sulfiding agents.

Of the extensive group listed, only those compounds which act both as antioxidants and sulfiding agents have any practical use in soaps. These include sodium thiosulfate and the hydrosulfite. Both appear equally effective in concentrations of 0.25 per cent to 0.5 per cent, whereas the use of the others mentioned as soap stabilizers is very problematical since our tests do not indicate any significant value. It may also be added that the period of effectiveness of thiosulfate or hydrosulfite is shorter than other inorganic stabilizers such as magnesium silicate (12, 14, 15) and zinc sulfide (4).

The effective inorganic soap stabilizers which offer practical stabilization in concentrations of approximately 0.5 per cent include sodium thiosulfate and hydrosulfite, magnesium trisilicate, magnesium sulfate, and zinc sulfide. Other previously recommended inorganic stabilizers such as zinc oxide (16, 17, 18) and chloride (19), alum (16), aluminum sulfate (19), sodium aluminate (19), and the phosphates (20, 21) have little or no value when applied to white milled soaps.

With the exceptions of thiosulfate and hydrosulfite, other inorganic stabilizers of acceptable effectiveness enjoy limited application since the addition of such materials interferes with detergency. Further, the accompanying curd formation makes their use prohibitive in bath and cleansing soaps.

IV. Organic Compounds: If the list of organic compounds recommended or patented for use in the stabilization of soap is indicative of the efforts expended in the search for such suitable materials, then it is fair to assume that a sizable fraction of the known organic compounds plus numerous newly developed chemicals have, at some time or other, been incorporated into soap with a view to obtaining some desirable effect. True indeed is the fact that the list of references to such compounds is exhaustive. However, it is equally certain that their application is often limited, sometimes doubtful, and, in many instances, of no practical value. Their relative value and shortcomings will be interpreted on the basis of our results in white milled soaps.

Of the simplest hydrocarbon derivatives recommended for soap stabilization, the use of 1.5 per cent-3.0 per cent of chlorinated paraffin hydrocarbons (22, 23) has been proposed either for use alone or with chlorinated ceresin, lanolin or mineral oil. Suffice to say that the use of halogenated bodies in soaps cannot

be expected to act in an antioxidative capacity. Such bodies act protectively and are not used as antioxidants. Mineral oils and derivatives are added to soap to improve the molding and appearance of the finished cake. At times, such oils are used as carriers for perfumes but seldom as stabilizers, since the rancidity inhibiting value of such products is very doubtful.

Alcohols such as allyl (19) and glycerol (23, 24) have been recommended. None of the aliphatic alcohols tested, including diacetone alcohol, triethylene glycol, cetyl alcohol and related alcohols show any promise as antioxidants. More successful are the aldehyde derivatives, such as trioxymethylene and paraldehyde (8, 14, 15, 16, 25). The antioxidative action of these aldehyde polymers is excellent but they are somewhat impractical in view of the decided chemical-like odor imparted to soaps containing them. Strangely enough, the polymers are far more effective than the corresponding aldehyde, as well as other aldehydes and ketones proposed for use in soaps including aldol, mesityl oxide, chloral hydrate (19), fructose and sucrose (24). It has been found that the effectiveness of formaldehyde is greatly enhanced by organic bases such as diphenylamine and benzylaniline. Such mixtures or compounds are particularly useful in soaps having a relatively high concentration of active metal impurities.

Organic hydroxy acids have been termed pro-oxidant rather than antioxidant (24, 26). These include malic, tartaric, citric, lactic, glycollic acids (21) and their salts. Considerable disagreement exists as to the value of the other organic acids such as naphthenic, succinic (26), phthalic (27) and the unsaturated acids, salts and esters including fumaric (28), maleic (11, 26, 27, 28, 29), aconitic, citraconic and itaconic (8, 9, 10). At best, the stabilizing action of the organic acids mentioned is both limited and doubtful. Combined acids, including phenolic acids in the form of guanidine salts do not improve the antioxidant value appreciably; however, the biguanide salts (30) are particularly effective by virtue of the biguanide radical rather than any contributing effect due to the acid radical attached thereto.

Rosin (abietic acid) has been widely recommended (22, 31, 32, 33, 34) as a soap preservative and fixative for perfume. Whatever antioxidant effect may be attributed to rosin in soap is restricted to its protective colloidal properties (33) rather than to any specific chemical function. This is equally true of the hydrogenated rosin acids or their esters. In short, the results obtained with rosin and derivatives indicate that little or no antioxidative action can be expected from such compounds. Of the organic acids recommended for soap stabilization, only aspartic and glutamic acids previously mentioned, can be expected to act as suitable soap antioxidants for white milled soap. Thus, salicylic acid and salicylate derivatives such as phenyl salicylate, B-naphthyl salicylate (28) or sodium acetyl salicylate (19), as indicated on our tests, can be relegated to the ineffective group of antioxidants. The action of salicylates is particularly weak in soaps. Slightly better but still of doubtful value in white milled soaps are the para-hydroxy benzoic esters (8, 28, 35, 36) and salts.

OF the series of organic compounds most extensively used as soap stabilizers, phenolic bodies enjoy the widest application, first because of their effectiveness and secondly, up until the recent imposition of sales restrictions because of defense requirements, for their availability. Here, too, however, are distinctions which vary over a wide range of effectiveness so that the numerous phenols recommended for the stabilization of soap must be governed by their application rather than any purely chemical consideration. For convenience and by way of generalization, phenolic compounds will be classified into three groups: first, the most effective stabilizers, followed by the partially effective, and lastly, the ineffective or detrimental compounds which cannot be applied to white milled soap.

Particularly effective are the para-t-butyl and amyl phenols (36, 37), crystallizable carvacrols (16), thymol (16, 38), diamyl phenol, ortho amyl phenol, para cyclo hexyl phenol, 3, 5-di-isopropyl-o-cresol, and 2, 6 di-isopropyl p-cresol.

Less effective phenols include phenol (8, 28, 38), xylenol, isothymol, creosote (28, 38), guaiacol (27, 39, 40), octyl phenols (36, 41) and para phenyl phenol and its salts (8, 36, 42).

Phenolic bodies not recommended for white milled soap, literature to the contrary notwithstanding, include crude and impure phenolic compounds contained in the above classifications, t-butyl cresol, some isopropylated o-cresols, "tar acids," ortho cyclo hexyl phenol, alpha and beta naphthols (10, 21, 38, 43), catechol (9, 26, 27), resorcinol (39), hydroquinone (6, 9, 10, 21, 26, 27), hydroxy hydroquinone (26), pyrogallol (9, 26, 27) and its condensation products (44) or derivatives (28, 45), phloroglucinol (9), naphthaquinones or naphthalene diols (26) and ortho substituted phenols of the diphenyl, diphenyl methane, phenyl naphthyl or dinaphthyl series (9, 10, 46, 47, 48, 49). Of doubtful value in soaps are the corresponding para substiuted phenols described in the patents referred to (47, 48, 49, 50).

The chief objection to the third group mentioned above lies largely in the limited antioxidative efficiency as well as in a decided tendency for the latter group of compounds, notably di- and poly phenols and naphthyl derivatives, to induce serious secondary discolorations in white milled soap. These compounds are probably more effective in neutral oils rather than soaps, despite the patent claims of some of the authors. Thus, the phenolic bodies available commercially as satisfactory soap stabilizers are limited. Patent restrictions on the tertiary phenols makes further limitations, leaving crystallizable carvacrols, thymol, amyl and diamyl phenol, para cyclo hexyl phenol, di-isopropylated ortho and para cresols

(*Turn To Page* 75)

GLYCERINE...

Some observations on its recovery and refining in modern soap plant practice ... second in a series of three articles

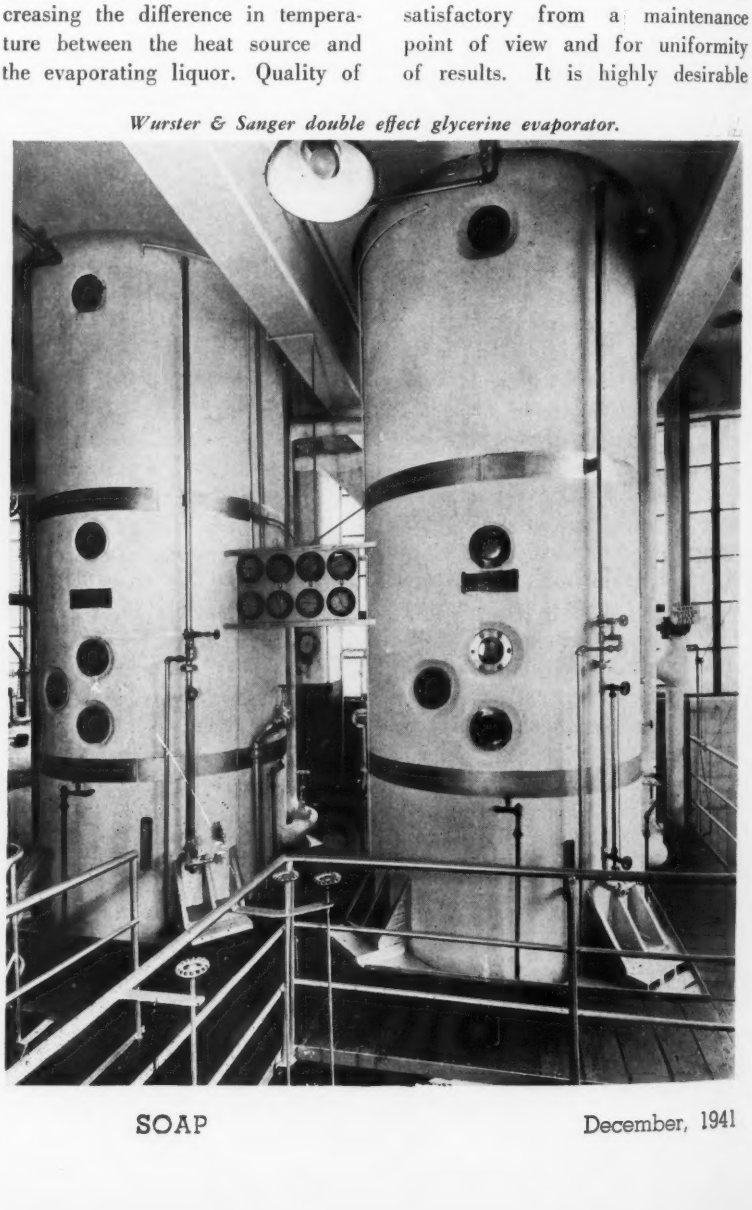
By J. W. McCutcheon

CRUDE glycerine is produced by vacuum evaporation of the lyes in vertical or horizontal tube, single or double effect evaporators. The operation is usually carried out in two distinct stages, evaporation to half or semi-crude containing 40 per cent to 45 per cent glycerine, plus a final concentration to crude of 80 per cent to 85 per cent glycerine. With a 5 per cent glycerine lye containing about 15 per cent salt and 80 per cent water, this preliminary concentration removes well over 90 per cent of both water and salt originally present. For an evaporator handling 100,000 pounds of 5 per cent glycerine per day, the volume of semi-crude produced is only about 11,000 pounds.

Frequently equipment is designed or is operated to keep these two steps separate from one another. In other cases, the distinction is not so apparent. Particularly is this true in the operation of a double effect Foster evaporator, although even in this case, the operation may be carried out in such a way that semi-crude only is produced in the first cycle of operation. To conserve steam, it is advantageous to utilize the vapor from the first stage for heating the second, thus providing a double effect. This saving lowers steam consumption approximately 0.3 to 0.4 pounds per pound of crude produced, or say from 1.5 lbs. to 1.2 lbs. At 30 cents per M for steam. it is difficult to justify the installation of double effect equipment on a production of less than 3,000 pounds of crude per day.

Vacuum is maintained primarily to speed evaporation by increasing the difference in temperature between the heat source and the evaporating liquor. Quality of crude is not affected thereby. For this reason, either pumps or ejectors are satisfactory, although most modern installations find ejectors more satisfactory from a maintenance point of view and for uniformity of results. It is highly desirable

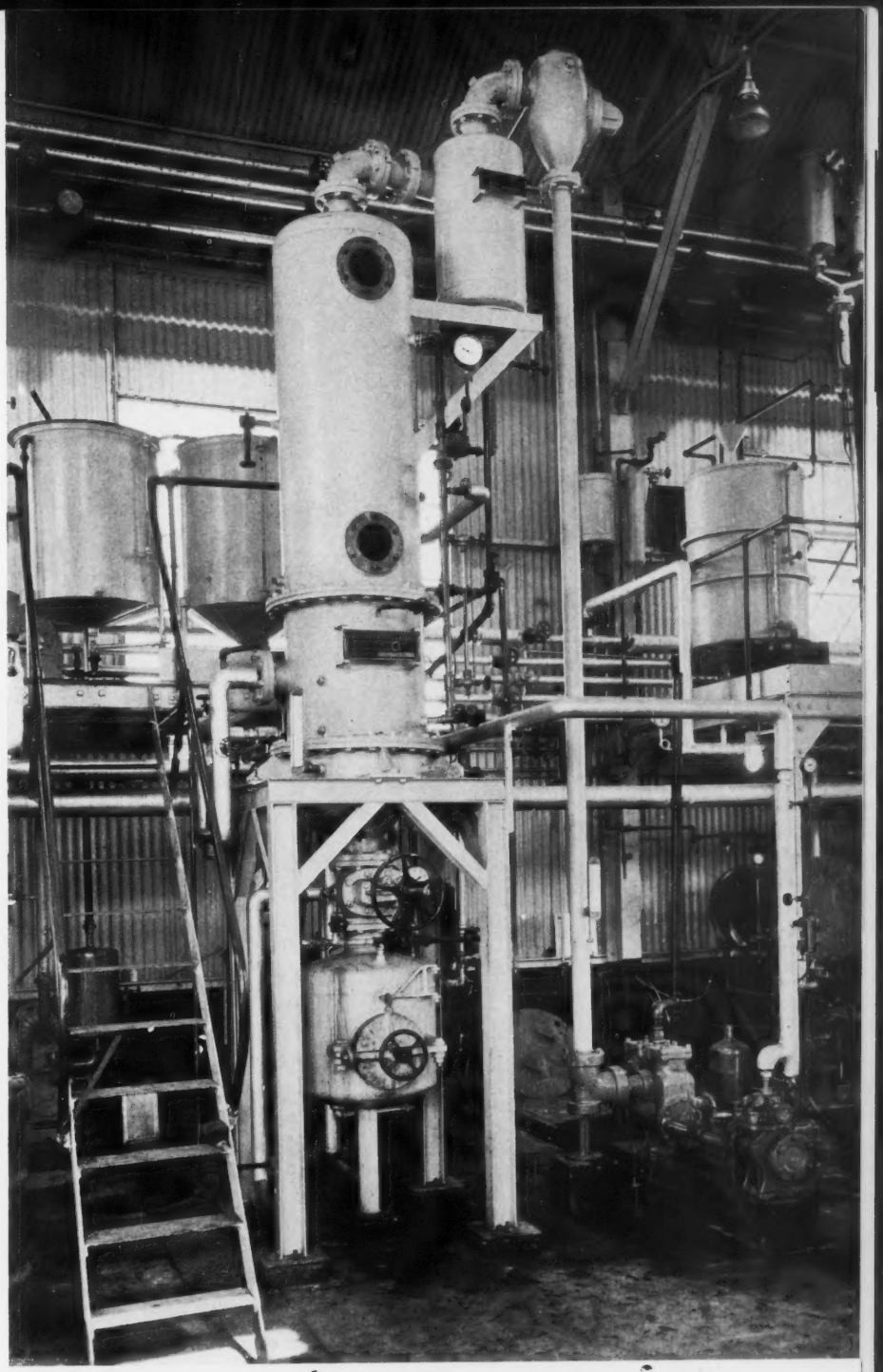
Wurster & Sanger double effect glycerine evaporator.



to have a steady vacuum system and one which revives quickly and uniformly after dropping a salt box. There is always a temperature rise when the vacuum goes down, so that any sudden decrease in pressure will cause bumping in the evaporator, increasing entrainment losses, and causing serious vibrations which may lead to leaks in the callandria. Usually a single or double stage ejector is used, but care must be exercised in making certain that the steam pressure fluctuations never fall below the critical value for which it was designed. Straightening steam lines, reboring the nozzles, etc., may be of aid in such cases.

The Foster vertical tube evaporator has two effects, each equipped with callandria, sight glasses, baffle plates, salt boxes, etc. The callandria of the first effect is direct steam heated, usually exhaust steam at 3 to 8 pounds pressure, with supplemental live steam inlet for finishing purposes. A half-moon overflow opening in the callandria permits circulation of the lye through the tubes, which are kept just covered during operation. Copper tubes are usually used because of their superior heat transfer, and they are sweated into top and bottom plates of alloy steel. There is a possibility for electrolytic action between the steel and copper, and this factor has been used to explain the corrosion which frequently takes place on the lower plate. However, it is probably more correct to attribute such corrosion to the rapid flow of aerated lye in such areas.

The vapors pass from this effect through a series of baffle plates into the steam chest of the second effect. As the lye in No. 1 effect is concentrated, it is transferred through an inter connecting line and valve to No. 2 effect. The input of raw lye and the transfer of concentrated lye is carried out intermittently by the operators so that maximum evaporation is obtained without danger of reaching a concentration where salt will be precipitated in No. 1 effect. Since the condensation of the vapors from



Single effect Wurster & Sanger evaporator for small soap plant.

No. 1 effect is limited by the heat absorbed from them in No. 2, and since this absorption decreases as the concentration of glycerine and hence the boiling point in No. 2 increases, one would expect a gradual decrease in vacuum in No. 1 effect as the cycle progresses. This is the case, a starting vacuum of 20″ gradually falling about 1″ per hour until after 7-8 hours, it will be down to 9-10″ of Hg. Because of this, the temperature will also show a progressive increase ranging from approximately 185°F. to 215°F.

Priming here can usually be attributed to the following causes in order of their importance:

(1) *Faulty treatment,* by not adding sufficient chemicals to handle abnormal soaps left in a poorly skimmed lye, breakage of filter clothes permitting press cake to pass through, failure to bring the treated

lye to a pH of 8-9 for evaporation. (2) *Faulty feeding and transfer of lye.* Lye should be fed frequently and in small amounts so as to avoid rapid temperature changes. After establishing a cycle of operations, it is often possible to install a by-pass around the main transfer valve of such size as to reduce considerably the amount of hand feeding necessary. Automatic feeds are also available, for raw lye in No. 1 effect on some types of evaporators. (3) *Faulty vacuum.* This is usually apparent to the operator, and may be caused by poor manipulation of the salt boxes, by variable steam pressures on the ejectors, poor pumps, etc. (4) *Miscellaneous reasons,* such as high sulfate content of the lyes, presence of sodium silicate due to high scrap return to the kettles, maintaining too high a lye level to permit efficient circulation, etc.

PERMITTING the concentration to proceed too far in No. 1 effect will result in rapid salting up of the tubes. This can cause a very serious situation, making necessary complete shut-down and boiling with water for hours. In stubborn cases the only remedy is to open the evaporator and drill out the tubes mechanically with subsequent danger of puncturing a tube or impairing its seal. Usually such difficulties are caused by failure to feed and transfer lye uniformly, thereby permitting either poor circulation by allowing the lye level to fall below the top plate, or by permitting too great a salt concentration. In certain cases, high sulfate lyes will cause trouble, although usually such effects are more noticeable in the salting up of No. 2 effect. It is good practice to make a thorough boil out of both effects at least once a week to clear up tubes which may be partly salted, which, if left alone, would eventually become completely plugged.

Further evaporation in No. 2 effect causes salt to drop into either of two boxes, these being used alternately in cycles of about 60 to 90 minutes, depending on the rate of evaporation and the glycerine and salt in the lye. Just before dropping a box, feeding from No. 1 to No. 2 should be stopped to balance the crude transfer and lye washes going into No. 2 as described below. After the connecting valve between the box and evaporator is closed, crude in the box is drawn back into No. 2 effect by suction, and the salt is washed several times with lye from No. 1 effect, which is subsequently drawn back into No. 2. Steam is then turned into the box for about 15 minutes to dry the salt, after which the box is cooled, opened and dumped. The glycerine content of the salt should be below 3 per cent and usually runs 1½ per cent to 2 per cent unless centrifuges are used. However, this matter is one of washing and can usually be adjusted to suit local conditions. Difficulties in drying can usually be traced to channeling effects produced chiefly by heating too rapidly, or by torn screens. Bronze or stainless steel screen are best suited to salt evaporators and they should be protected from scoring by a metal grid. When the sulfate content of the salt reaches 12 per cent to 15 per cent, difficulties in drying will begin to be felt and consideration should be given to its rejection.

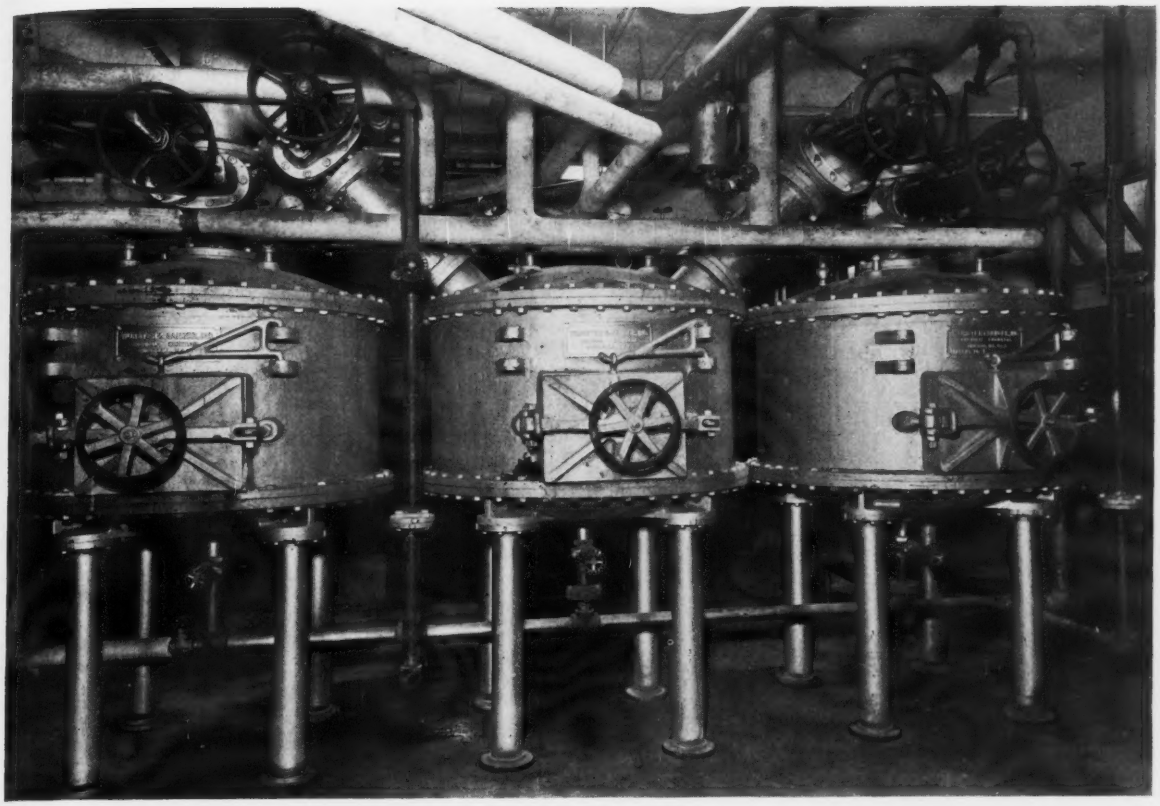
Illustrations of glycerine evaporating equipment in the first and second installments of Mr. McCutcheon's article are by courtesy of Wurster & Sanger, Inc., Chicago, well-known designers and builders of soap and glycerine plants.

In large scale production, centrifugals, either batch or continuous, may be used very economically. The salt may be transferred in buggies to the kettles, or better, dropped to a convenient dissolving tank and used as brine. In any system of accounting, care should be exercised to keep a close record of the glycerine returned to the kettles in salt, since its short cycle from kettle to crude and back to kettle of 2 to 3 times per month can easily account for 5 per cent of the total crude produced.

The vacuum on No. 2 effect is fairly constant at 26-28" throughout the run, with the temperature rising slowly over a 7 to 8 hour period from 150°F. to about 170°F. At this point, the semi-crude can be run direct to storage and the cycle repeated, or it can be concentrated directly to crude by replacing the lye in the first effect with water and boiling vigorously so that the necessary heat transfer to No. 2 can be obtained. The latter procedure takes about one to two hours boiling and depends on obtaining the proper vacuum-temperature ratio to produce the required concentration. It is customary to aim at an 81 per cent to 82 per cent glycerol content, although 85 per cent glycerol crude may be run without undue losses. This is dangerously high, however, and should be lowered by gradually dropping the finishing temperature 2°F. at a time until the glycerol is brought within the normal range. Approximate finishing temperatures and vacuums are tabulated below:

Vacuum	*Temp. °F.*
27.0	200
28.0	190
28.5	185

It is general practice after the initial breaking-in period to run on a definite time cycle, both in regard to the dropping of salt and in regard to the start of concentration. By following this method, overlapping of operations is considerably reduced. It is a distinct advantage, however, to rotate the men on the job so that flexibility of operation can be maintained. Cases have been known where the plant was run on such rigid routine that good operation was an exception rather than the rule. Treat and evaporation labor on normal 5 per cent to 7 per cent glycerol lyes should run about twelve man hours per ton of crude produced, although on small units this figure may be as high as 30 man hours. Evaporation and treat losses (left in press cake, etc.) should not



Salt Filters under double effect glycerine evaporator.

be over 1.50 per cent. When glycerine left in soap runs 0.6 per cent to 0.8 per cent to 8 per cent to 10 per cent of the total, glycerine yields will run about 88 per cent to 90 per cent, leaving about 0.5 per cent lost in soap boiling and in handling the oils and fats.

THE most frequent repair necessary on evaporators is the repair of the tubes. The operator must be constantly on guard to spot small leaks, as they seriously affect the rate of production. A skillful operator frequently knows when a leak exists by the way his equipment feeds, even before such leak has opened enough to be apparent in the normal way. After the tubes have become thin through usage, pin holes are constantly appearing and replacement of tubes becomes a periodic necessity. Horizontal tube evaporators are superior in this respect to vertical ones, since leaks are more easily located and repaired. With large vertical tube machines, the repair mechanic can get completely inside the boiling chamber which makes the tubes much more accessible, but the location of small leaks usually requires the application of water pressure on the steam chest and even minor repairs usually require a shut-down of at least four to six hours. With smaller sizes of equipment the accessibility of the tubes decreases and very frequently it is necessary to drop the entire callandria. This factor should be taken into consideration in the purchase and erection of new equipment.

It is usually the tubes of the first effect which show the most wear because the bulk of the boiling is done there. Vibration through uneven feeding, too vigorous boiling or too rapid changes in the vacuum during the dropping of salt boxes frequently cause weak tubes to split or break away from the bed plate. Then also, if a double effect evaporator is used to concentrate semi-crude, the steam pressure required in No. 1 effect may cause the collapse of weak tubes. It is advisable to equip such steam chest with a safety valve set at about 8 to 10 pounds.

When repairs to tubes begin occurring about once every three or four weeks, serious consideration should be given to complete retubing, particularly if the majority of the leaks are pin holes and the removed tubes show losses in weight up to 75 per cent of the original. When this is done, replacement of the bed plate should be considered as well, since it frequently happens, particularly on the bottom plate, that corrosion makes it impossible to make a proper seal for the tubes.

Baffle plates should be inspected at very frequent intervals to see if they are in place. They have a frequent habit of falling over the top of the callandria and impeding circulation. Catchall return lines should also be tested daily to guard against plugging up with salt. The importance of an adequate supply of cooling water for pump or bootleg is essential, but is dependent to a considerable degree on climatic con-

(*Turn to Page* 77)

New Products and

A new family of shampoos, consisting of "Sham-Ru" for rugs, "Sham-Do" for dogs, and "Sham-Fam" for regular family use, is now being distributed by the Mujan Co., Chicago, for sale through regular and wagon jobbers.

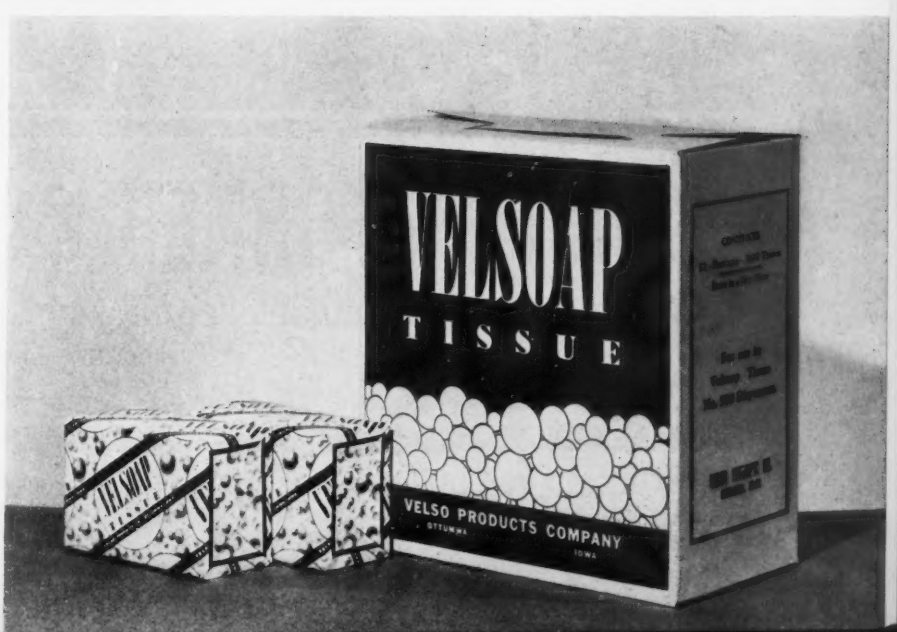
A beribboned band-box, symbol of elegant feminine neatness, serves as a package for this latest toiletry offering of Allen B. Wrisley Co., Chicago, one of three new "Beau Rose" items brought out for the holidays. With two soap spheres, dusting powder and cologne it retails at $1.95.

"Whisper Soap," new offering of Lucien Lelong, Chicago, is featured by its elegant lines "direct from the sculptor's studio." Designed to catch the gift shopper's eye, box of three hand-sized bars retails at $1.50. Box of three bath-sized bars retails at $2.50.

Packages

Sample portions of granular, crystalline and powdered soap are contained in pliofilm envelopes, 10,000 of which were recently distributed by National Oil Products, Harrison, to the metal working trades, laundries, etc.

Two cakes of "Silver Lace" facial soap are included in the new "Hind's" Christmas gift set of Lehn & Fink Products Corp., New York, in company with "Hind's" lotion, powder, lipstick, cologne, and perfume, all attractively packed in a holiday box to retail at $5.00.



Hand size pieces of paper toweling, impregnated with soap, are new products of Velso Products Co., Ottumwa, Iowa. "Velsoap," disposable soap tissues to carry with you, sell at ten cents per package of twenty-five tissues.

NEWS

Iowa Firm Launches New Soap

National By Products, Inc., Des Moines, recently launched its new granulated soap "Linal" in the Des Moines market. Erik Lindhardt is president of the company and F. E. Joyce, who perfected the process for making the soap, is in charge of production.

Keho Heads Dorothy Gray

Joseph Keho, general manager of Dorothy Gray, Ltd., New York, since 1933, and vice-president since 1938, has just been made president of the company. Dorothy Gray, Ltd., is owned by Lehn & Fink Products Corp., New York. Edward Plaut, president of Lehn & Fink, has been named chairman of the board of Dorothy Gray, Ltd.

Consumer Institute Covers Soap

"Your Servant Soap" is the title of a supplement section to the October issue of *The Family Dollar*, monthly publication of Consumer Credit Institute of America, Inc., New York, containing a brief sketch on soap manufacture, an article about the various fats and oils used in soap making, a historical article entitled "Twenty Centuries of Soap" and other data about soap and the soap industry.

Mobile Laundry Service

To overcome the lack of domestic washing facilities in England, one of the discomforts experienced by those whose homes have been damaged by bombs,—Lever Brothers, Ltd., Crosfield, Watson and Gossage Ltd., and Thomas Hedley & Co., Ltd., have in cooperation, formed the National Emergency Washing Service. The firms are providing a fleet of self-contained mobile laundries for service in any part of the country where they may be required. Each unit is capable of washing a thousand garments a day.

George A. Wrisley Joins OPM

George A. Wrisley, vice-president of Allen B. Wrisley Co., Chicago, has just begun work as head of the Soap and Glycerine Unit, Office of Production Management, Washington, D. C. The unit is expected to deal with problems concerning soap fats and fatty acids, as well as soap and glycerine. It is expected that the OPM will select an advisory committee in the near future from representative members of the soap, glycerine, and fat splitters' industries.

GEORGE A. WRISLEY

Bristol-Myers Votes Extra

An extra fifteen cent dividend was declared last month by directors of Bristol-Myers Co., payable Dec. 1 to stockholders of record Nov. 14. This was in addition to the regular quarterly dividend of 60 cents a share. Bristol-Myers Co. recently reported consolidated earnings of $2,184,965, or $3.27 per share, for the nine months ended Sept. 30.

Magnuson Products Co. Moves

Magnuson Products Company, Brooklyn, N. Y., formerly at 55 Third St., has just moved its offices to new quarters at 50 Court St. The Magnuson firm manufactures industrial cleaning compounds. The factory at the old address has been retained and a warehouse and about 17,000 square feet of factory space have been added to the firm's manufacturing facilities.

Denies "Epso" Trade Mark

An application for registration of the mark "Epso" for soap made by Joseph Metrie, Milwaukee, was denied in a recent decision of the U. S. Patent Court. The decision affirmed a previous decision of the Examiner of Trade-Mark Interferences sustaining the opposition by Procter & Gamble Co., Cincinnati, on the basis of the similarity between "Epso" and the older P. & G. trade mark "Chipso".

Curtails Washer Production

Production of washers and ironers was ordered reduced by 17.3 per cent in a limitation order, L-6, announced by the division of Civilian Supply, Washington, D. C., October 29. The curtailment program embodied production cuts ranging up to 20 per cent for the larger companies, with 17.3 as an average figure for the entire industry. Permitted production is based on percentages of average monthly factory sales for the year ended June 30, 1941.

Widow of F. G. Burke Dies

Mrs. Joanna A. Burke, widow of Frank G. Burke, founder of Manhattan Soap Co., New York, died November 3, at the age of 83 years.

Ittner to Receive Perkin Medal

Dr. Martin H. Ittner, in charge of research at Colgate-Palmolive-Peet Co., Jersey City, has just been named

DR. MARTIN ITTNER

to receive the Perkin Medal of the Society of Chemical Industry for 1942. This medal is awarded annually for outstanding work in applied chemistry, and the medallist is selected by a committee representing the five chemical societies in the United States. Dr. Ittner is 71 years old. For almost 45 years he has been in charge of research at Colgate-Palmolive-Peet or predecessor companies. He has made valuable contributions to the field of distillation, and holds several patents covering new processes for glycerine production. The medal is to be presented January 9, 1942, at the Chemists' Club, New York.

Packaging Consultant Joins OPM

George T. Henderson, director of the package laboratory of Hinde & Dauch Paper Co., Hoboken, N. J., was recently appointed assistant to the head of the container branch of OPM. He assumed the duties of his office November 1.

Ban Cellophane As Soap Wrap

A ban on the use of cellophane and similar transparent materials derived from cellulose for packaging soaps, cosmetics, razor blades, laundry, candles, wax products, decorations and novelties including gift wrappings, and certain other items was ordered November 7, by Donald M. Nelson, director of Priorities, OPM, Washington, D. C. Large quantities of chlorine, phenol, and glycerine, chemicals vital to the defense program, are used in making cellophane and similar materials. The limitation order became effective at once, but it permits suppliers and their customers to use up existing stocks under certain conditions. Users are given 60 days to exhaust stocks on hand. Suppliers who have prepared stocks for customers in such a way that they could not be used by persons unaffected by the order are allowed the same time for disposal.

Soap Employment Index Rises

Both the index numbers of employment and pay rolls of wage earners in the soap industry rose to higher levels in September as compared with August, it has just been reported by the Department of Labor, Washington, D. C. Employment index for the soap industry was 98.0 for September, 1941, as compared with 97.4 for August, and 87.9 for September, 1940, (2-year average 1923-25 equals 100.0). The pay roll index for the industry for September, 1941, was 133.2, as compared with 129.7 for the previous month, and 107.0 for September, 1940.

Roure-Dupont in New Offices

Roure-Dupont, Inc., essential oils, New York, has just opened new offices at 366 Madison Ave. The laboratories and warehouse of the company remain at the old address at 353 Fourth Ave.

SOAP MAKING FROM SLUDGES

Special soap manufacturing technique is indicated where the fats used are high in impurities such as proteins, highly oxidized fats and colloids, and where the water supply is definitely hard. A simple method of handling such soap making problems is outlined by Andreas Treffler in an article which will appear in the January issue of SOAP AND SANITARY CHEMICALS.

Am. Can Elects Black to Board

C. H. Black, vice-president in charge of sales of American Can Co., New York, was elected a director of

C. H. BLACK

the company at a recent meeting of the board. Mr. Black joined the company in 1908.

Standard Synthetics in S. F.

Standard Synthetics, Inc., New York perfuming material house, has recently opened a branch office in San Francisco, according to J. L. Hindle, vice president, who has just returned from the Coast. He reports that prospects in that territory are excellent and also stated he was pleased with conditions at their Chicago and Kansas City, Mo., branches which were visited on his trip. The new San Francisco branch, in charge of F. D. Lyon, is located at 433 South Van Ness Ave. The Chicago branch, at 219 East North Water St., is in charge of E. M. Sinclair and E. S. Schumm, and the Kansas City office is managed by Richard Remus. Mr. Hindle has also advised that warehouse facilities in New York have been tripled and that the firm's London factory is working on a full time basis despite the war.

Anchor Advances Dilworth

J. R. Dilworth has just been appointed assistant general sales manager of the container division of Anchor Hocking Glass Corp., Lancaster, Ohio. At the same time, R. N. DeMerell was named manager of the company's New York office.

Soapers Protest 11½c Glycerine

THE setting of a ceiling price of 11½ cents a pound on crude glycerine by the Office of Price Administration, which became effective November 10, is being protested by small and medium sized soap manufacturers (crude glycerine producers) in all parts of the United States. No committee has been formed to represent the industry as yet, but a number of soap manufacturers have traveled to Washington unofficially in an effort to obtain a revision of the present price ceiling. The price of 11½ cents is much too low to be fair to crude glycerine producers, many manufacturers protest. Small soapers insist that the ceiling price on crude glycerine should be at least two cents higher, or 13½ cents a pound, in order to make it worth while to produce crude glycerine at all.

The very best practice results in a recovery cost of glycerine variously placed from 2¼ to 2.8 cents, and for many small soapers, the cost is as high as 5½ cents a pound, say those fighting the low OPA figures. The average for the industry is about 3¼ cents a pound. How, the producers of crude glycerine ask, with tallow at 9 cents a pound and recovery costs of 3¼ cents, can crude glycerine be sold at 11½ cents? Result is that some soapers may be forced to leave higher percentages of glycerine in their soap, and to stop boiling down to crude glycerine. Action on the mounting protests may be taken in the near future when a committee is formed to attend a hearing at Washington. J. K. Galbraith, assistant administrator, OPA, has invited several officials of prominent crude glycerine producing firms to serve as representatives of the industry. The hearing is to take place within the next few weeks.

Apparently the larger soap companies, because they are equipped to refine the crude glycerine they produce, have made neither comment nor protest on 11½ cent crude or 18 cent refined price ceilings.

Offer New Granulated Soap

National By-Products, Inc., Des Moines, Ia., is advertising a new granulated soap, "Linal," in Iowa newspapers and through broadcasts on Iowa radio stations. A feature claimed for the product is the inclusion of an ingredient which, it is said, acts like a hand lotion to protect the skin.

—— ♦ ——

Premiums, Deals On Way Out

Indications that many deals, premium offers, and one-cent sales would be eliminated by the first of January by some of the larger soap companies was supplied last month during the conventions of the National Association of Food Chains and of the Associated Grocery Manufacturers of America, held at Chicago and New York respectively. It is reported that Colgate-Palmolive-Peet Co., Jersey City, declared its intention of discontinuing all types of over-the-counter offers in grocery stores after the first of the year, Procter & Gamble Co., Cincinnati, announced "the total elimination . . . by January 1, 1942" of store deals, and that Lever Brothers Co., Cambridge, Mass., decided that all deals, premiums, and one-cent sales would be discontinued by January first. Whether similar action would be taken in the drug field on toilet soaps not sold in grocery stores was not disclosed.

James A. Reilly, soap sales manager, Colgate-Palmolive-Peet Co., in a report on premium activities given before the AGMA convention, November 5, recommended that all association members eliminate over-the-counter offers, "at least for the duration of the war." Where it was considered necessary to continue using premiums, he suggested the use of mail-in offers. Mr. Reilly cited opposition by grocery stores as one of the reasons behind the proposed abandonment of over-the-counter offers, mentioning the policies of Safeway Stores, A. & P. Tea Co. and First National Stores of Boston which companies either have discontinued or plan to discontinue handling premiums.

Other factors mentioned by Mr. Reilly include the shortage of paper, making it difficult to take care of even normal demand; the problem of obtaining raw materials; the problem of purchasing the right type of premium in sufficient quantities for a premium operation of any scope; and the increased consumer purchasing power which makes the use of premiums less necessary at this time.

—— ♦ ——

Ad Plans for "New Oxydol"

Procter & Gamble Co. has launched an extensive promotional campaign for their "New Oxydol" laundry soap powder, including advertising copy in 250 newspapers, to be followed by a series of colored comics in 125 newspapers. Magazine color copy will also be used during 1942.

—— ♦ ——

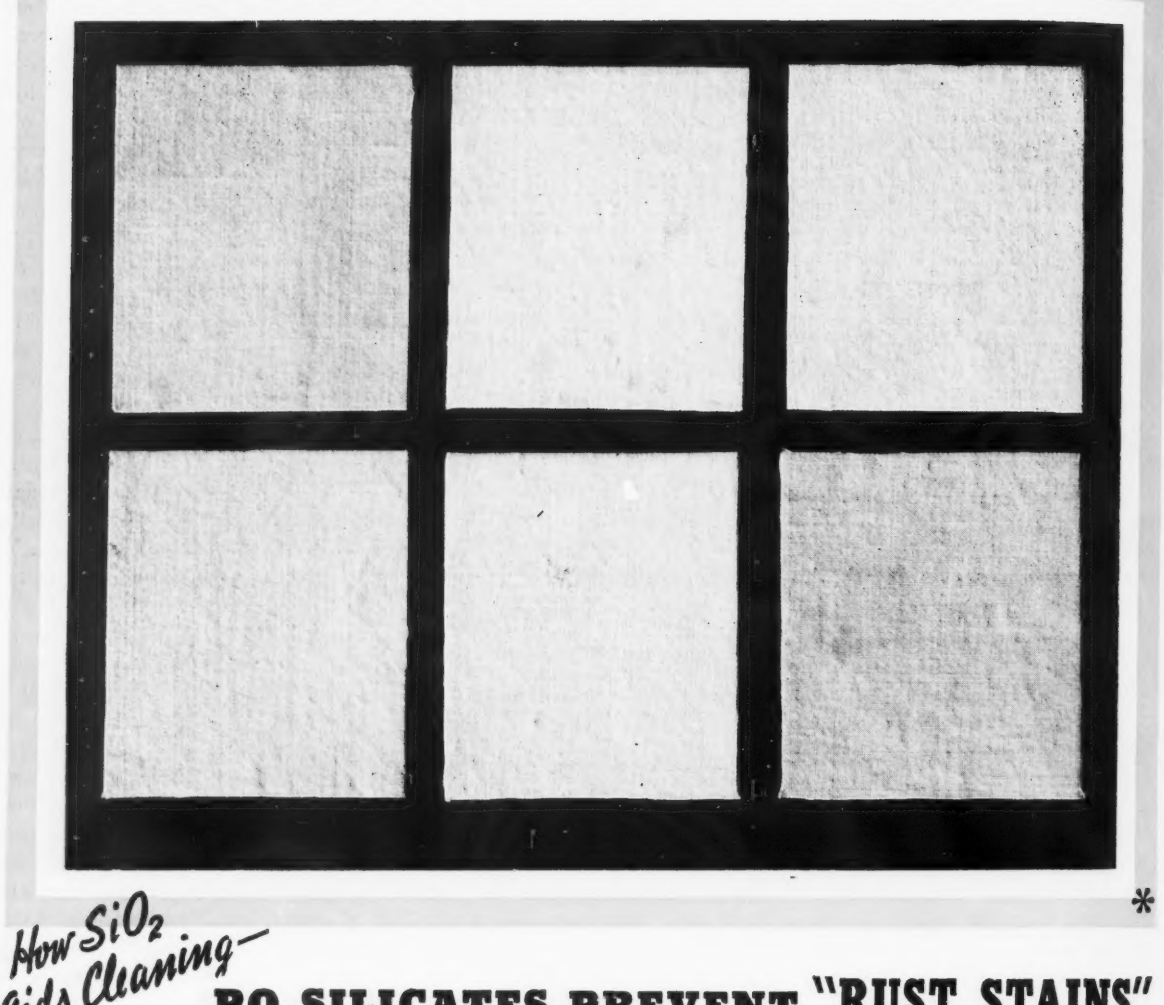
"Kitchen Klenser" Ad Campaign

Fitzpatrick Bros., Chicago, are using newspapers in 27 cities, five radio stations and half-page, two-color advertisements in the *Ladies Home Journal*, in a drive on behalf of their general purpose household scouring powder, "Kitchen Klenser." Using a coined word, "antiseption," the company claims that its product is the only one of its kind which possesses germ-killing power. Copy asserts that "Kitchen Klenser removes an average of 97 per cent of surface-lurking germs as it cleans." For 15 cents, housewives are also offered a new 64-page "Idea Book".

—— ♦ ——

Ends Two-In-One Claims

Hecker Products Corp., New York, recently entered into an agreement with the Federal Trade Commission to cease advertising that "Two-In-One Paste" shoe polish or "Liquid Polish" provides a protective coating against all stains, or that no stains will penetrate through the protective coating into the shoe leather. The company also agreed to cease representing that "Two-In-One White Cleaner" or "Shinola White Cleaner" will not rub off shoes.



*

How SiO_2 Aids Cleaning—

PQ SILICATES PREVENT "RUST STAINS"

● **ARE** your soaps and detergents effective in preventing discoloration of fabrics due to iron in water? Make them so by using one of the PQ Silicates of Soda. The effect of silica in sodium silicate in preserving the whiteness of cloth in the presence of ferrous sulphate is shown in the center cloth samples above.

A discussion with you of this or other properties of PQ Silicates does not obligate you.

*Solutions containing 30 p.p.m. ferrous sulphate in which cloth samples were washed:

UPPER LEFT	UPPER CENTER	UPPER RIGHT
0.1% Soap	0.1% Soap	0.1% Soap
0.2% NaOH	0.2% $Na_2O.2SiO_2$	0.2% Na_2CO_3
11.9 pH	11.3 pH	11.5 pH
LOWER LEFT	**LOWER CENTER**	**LOWER RIGHT**
0.2% NaOH	0.2% $Na_2O.2SiO_2$	0.2% Na_2CO_3
11.9 pH	11.3 pH	11.3 pH

Address our Technical Division, Philadelphia, requesting a copy of "The Role of Silica in Soluble Silicate Cleansers".

PHILADELPHIA QUARTZ CO.

SILICATES OF SODA

125 S. THIRD STREET, PHILA., PA.

Quaker Erects New Plant

Ground has just been broken for a new two-story manufacturing plant totaling 40,000 square feet on the property of Quaker Chemical Products Corp., Conshohocken, Pa. This is in addition to recently completed buildings which increased manufacturing and storage facilities of the company by 16,000 square feet. New construction is of stone, concrete and brick.

Survey Farm Soap Demand

A picture of the size of the farm market for various commodities such as soaps, insecticides, tooth pastes, etc., is given in a recent farm survey conducted in Washington, Idaho and Oregon by the *Pacific Northwest Farm Trio*, Spokane, Washington. The tabulated results were published under the title "What Farmers Are Buying in 1941." Results reveal that the following quantities of products are used annually on the average farm in the states named: tooth powder, paste, 7.4 packages or cans; toilet soap, 36.5 cakes; laundry soap, 62.0 cakes; scouring cleansers, 8.7 cans, cakes; shaving soap, cream, 3.9 packages; soap chips, 10.6 packages; washing powders, 12.5 packages; oil for spray, 129.8 gallons; fly spray, 11.1 quarts; nicotine sprays, 12.8 pints; household bleaches, 5.6 packages; and lye, 6.5 cans. There are 187,178 farms in the three states surveyed.

Innis Speiden Official Dies

Henry G. MacKelcan, vice-president and secretary of Innis, Speiden & Co., chemicals, gums and waxes, New York, was fatally stricken November 15, at Hartford, Conn., as he watched his son, Douglas, playing football in the Wesleyan-Trinity game. Mr. MacKelcan was 51 years old. His son, a senior at Wesleyan, was playing halfback in his last game for the college. Near the end of the game Mr. MacKelcan suffered a cerebral hemorrhage and was taken to the Hartford Hospital where he died that night. Born at Hamilton, Ontario, Mr. MacKelcan had lived at Maplewood, N. J., for the past 20 years. He had been with Innis, Speiden & Co., for 33 years.

Dorothy Lovett, RKO film player, demonstrates a new Bobrick liquid soap dispenser in her Hollywood home. The new style push-in dispenser, now being marketed by Bobrick Manufacturing Co., New York and Los Angeles, has a plastic bracket made of "Tenite", by Eastman Tennessee Company, and a duraglas bowl made by Owens-Illinois Glass Company.

Lever, Ltd., Signs With Union

The first collective bargaining agreement in the soap industry in Canada was completed October 31, with the signing of a contract by G. A. S. Nairn, president of Lever Brothers, Ltd., Toronto, and officials of the Packinghouse Workers' Union, on behalf of some 300 employees. Under the new wage schedule provided for by the contract, male workers are to receive a minimum of 55 cents an hour, and girls and youths (under 18 years of age) a minimum of 40 cents an hour. The contract provides that new employees will join the union. Statutory holidays and vacations with pay are included in the agreement.

Expansion of Copra Plant

Soon after the coconut oil extraction plant of W. R. Carpenter (Canada) Ltd., at Vancouver, B. C., went into operation, plans were made for an addition to increase the capacity to five times that originally planned. Storage capacity at the plant will be raised from 4,000 tons to 10,000 tons and the number of oil expellers increased from two to six, producing 90 tons of oil per day.

Whittaker Head Dies

Samuel H. Clark, president of Whittaker, Clark & Daniels, Inc., fillers and abrasives, New York, died November 13 at his home at Maplewood, N. J. He was sixty-two years old. Mr. Clark was born in Newark, N. J., where his father was a builder. At the age of eighteen, he went to work for W. H. Whittaker Co., New York. In 1916, he became president of the concern and two years later its name was changed to Whittaker, Clark & Daniels, Inc.

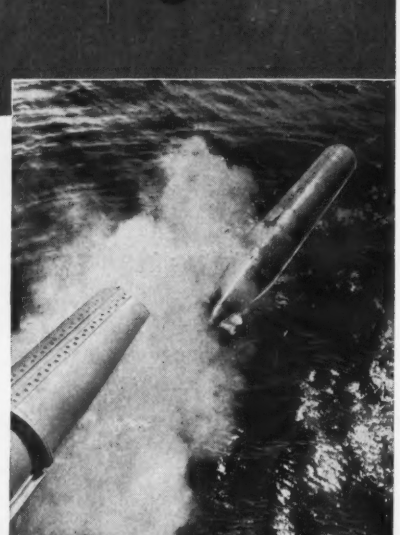
Control Canadian Glycerine

Regulations controlling the sale, distribution and use of glycerine in Canada were announced recently by Hon. C. D. Howe, munitions and supply minister. The order restricts the use of refined glycerine in the year terminating October 1, 1942, to 70 per cent of the amount used dur-

U.S.I. ALCOHOL NEWS

December ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1941

ALCOHOL ESSENTIAL IN DEFENSE



Smokeless powder for firing shells, airplane construction and operation, and torpedo propulsion are among the many defense uses for ethyl alcohol. Medical applications also consume large quantities of alcohol.

Large Quantities Needed in Many Vital Phases of Current Program

Ethyl alcohol — always one of industry's essential raw materials — has taken on even greater importance as a result of the requirements of the defense program.

Because of the extraordinary diversity of alcohol's uses, enormous quantities are being consumed for defense purposes, with a consequent limitation of the amounts available for non-defense use.

In Smokeless Powder

The manufacture of munitions represents one of the many important phases of alcohol's utility. Alcohol is employed as a dehydrating agent in the manufacture of the nitrocellulose needed in munitions; as a wetting agent in treating nitrocotton for safe storage and shipment; and as a solvent in making gelatin dynamites and smokeless powder. It has been estimated that every time a 16-inch shell is fired, a 55-gallon drum of alcohol is indirectly consumed.

In Torpedo Propulsion

Firing a torpedo calls for alcohol. Here the alcohol is used directly, to furnish the motive power for propelling the torpedo.

Another important application of alcohol is its use as a de-icing fluid for propellors, carburetors and windshields in addition to its employment in indicating devices for aviation and marine service: compasses, gauges, thermometers, barometers, and other instruments.

Medical Applications

The antiseptic properties of alcohol naturally lead to many medical uses. Not only is it used directly for such purposes as the sterilization of instruments and supplies, but it serves also as one of the most important raw materials in the production of anesthetics and of many types of drugs and pharmaceuticals. Ether and ethylene, for example — two of the most widely used anesthetics — are both produced from alcohol, while injections of alcohol itself are used as a therapeutic nerve block for the relief of pain.

Other Typical Applications

Many of the other phases of alcohol's importance in defense result from its utility as a raw material in the manufacture of other chemicals. Ethyl acetate, an extremely important solvent in the manufacture of airplane "dopes," is an alcohol-derived chemical, which is used also in the formulation of many of the lacquers now needed in large quantities for finishing defense products.

These applications represent only a few of the outstanding phases of alcohol's vital role in carrying out the defense program, but they serve to indicate the extent to which alcohol is consumed for emergency needs.

TECHNICAL DEVELOPMENTS

For further information, write U.S.I.

A new colloid mill adapts a triple processing action to the production of heavy colloidal dispersions, according to the maker, who recommends it for use in the manufacture of ointments, creams, soaps, and many other products. **(No. 520a)**

A new aromatic compound can be used for complete replacement of hydroxycitronellal in all toilet preparations in which the latter substance was previously used, according to the manufacturer. **(No. 521a)**

Cleaning of painted walls is facilitated by a new clear, transparent finish that can be applied over wall paints. Maker says that it can be used in plant or office, and that it prevents dirt and grime from penetrating pores of the paint. It can be removed by clear water, taking all dirt with it. **(No. 522a)**

A new preservative for wood floors cannot scuff or chip off, because it penetrates the wood, it is reported. Maker states that the material gives preservation as deep as it penetrates. **(No. 523a)**

An adsorbent material which has been used in the past in the combined determination of thiamin and riboflavin, may be successfully employed also in the decolorizing of oils, fats, and waxes, and in the selective adsorption of hormones, dyes, and many other compounds, it is claimed. **(No. 524a)**

ing the calendar year 1940, except, of course, where the glycerine is to be used for the making of explosives. Exportation of glycerine is prohibited by the order, and the use of glycerine as an anti-freeze, or for making anti-freeze, is also prohibited. The order provides that no person making refined or dynamite glycerine shall deal in same except under a permit issued by the controller.

Complete Prison Soap Plant

The soap plant at the state penitentiary, at Rikers Island, New York, begun in the summer of 1940, has just been completed and is going into operation the first of December, according to W. Barron, of H. Sand & Co., New York, who constructed the plant under contract to the City of New York. The plant will be opened formally by Mayor Fiorello LaGuardia, the first week in December. When in full operation it is expected to produce soap with a value of between $50,000 and $75,000 per year. It will be run by 40 inmates of the prison under the supervision of one professional soapmaker, not an inmate, and one chemist chosen from the Civil Service list. The Civil Service test for the soap maker is now open.

The entire work of planning, designing, and supervising the construction and operation of the new soap plant has been in the hands of William R. Prosser, of the Kirkman & Sons division of Colgate-Palmolive-Peet Co., Brooklyn, who was selected for the job on the basis of his work on the soap plant of Brooklyn Technical High School. The plant would have been completed at a much earlier date, he reports, except for the difficulty of obtaining motors, pumps and other machinery.

Ends Melville Co. Soap Claims

The Federal Trade Commission has just accepted an agreement from B. J. Melville Co., Cincinnati, distributor of "Pine Needle Oil Soap," to cease using the term "Pine Needle Oil" or otherwise represent that the soap contains a substantial amount of pine needle oil.

Fulton Tells Beach Co. History

G. R. Fulton, who recently acquired controlling interest in Beach Soap Co., Lawrence, Mass.,

G. R. FULTON

(see *Soap*, November), has just sent us some additional information on the history of the company. Beach Soap Co., he writes, has been in operation continuously since 1828. Its principal product up to 1930 was "World Soap" a yellow laundry bar, marketed chiefly in northern New England. Mr. Fulton entered the firm in 1930, and in 1935, Kendall Manufacturing Co., maker of "Soapine", was acquired by the company. Kendall Manufacturing Co., had been established in 1823. In 1940, Beach purchased Lysander Kemp & Sons (established 1835) and George E. Marsh Co. (established 1862). The principal product of the Marsh Company had been "Good Will Soap."

Coconut Oil Imports Top '40

Coconut oil imported into the United States during the third quarter of 1941 totaled 119,036,000 pounds, as compared with 84,629,000 pounds imported in the third quarter of 1940, according to figures just released by the bureau of the census, U. S. Department of Commerce. Other import figures for the third quarter of 1941 are given as follows: palm oil, 92,394,000 pounds, as compared with 80,009,000 pounds in 1940; olive oil, sulfured, 2,525,000 pounds, as compared with 8,699,000 pounds; olive oil, other inedible, 95,500 pounds, as compared with 795,000 pounds; whale oil, 451,000 pounds, as compared with 5,368,000 pounds; and inedible tallow, 12,549,000 pounds, no comparable import figures being given for inedible tallow for the third quarter of 1940.

Domestic production of inedible tallow during the third quarter of 1941 totaled 207,344,000 pounds, as compared with 167,359,000 pounds for the like quarter of 1940, according to the report of the Census Bureau. During the period, consumption of tallow amounted to 306,963,000 pounds, as compared with 212,285,000 pounds for the third 1940 quarter. Production of crude coconut oil for the quarter was 70,444,000 pounds, as compared with 73,038,000 pounds in 1940, while consumption of crude coconut oil was 187,302,000 pounds as compared with 148,240,000 pounds in 1940. For greases, excepting wool grease, production totaled 121,076,000 pounds for the quarter, as compared with 101,391,000 pounds in 1940, and consumption totaled 117,987,000 pounds as compared with 80,464,000 pounds in 1940. No figures are given for crude palm oil production in the third quarter of either 1940 or 1941, but consumption is shown as 70,168,000 in 1941 and 43,080,000 in 1940.

Crude glycerine production in the third quarter of 1941 totaled 59,095,000 pounds and consumption was 62,284,000 pounds, as compared with production of 46,393,000 pounds and consumption of 48,587,000 pounds in the 1940 quarter. Stocks of glycerine on September 30, 1941, were: crude, 20,581,000 pounds; dynamite, 23,410,000 pounds; C.P., 22,623,000 pounds; on September 30, 1940, figures were: crude, 19,788,000; dynamite, 26,529,000; C.P., 32,841,000 pounds.

Mrs. M. H. Fairchild Dies

Mrs. Maud R. Fairchild, widow of the late Meredith H. Fairchild, Chicago soap manufacturer, died Nov. 3, while visiting in Oakland, Calif. Mr. Fairchild's death occurred last March. Two sons, David R. Lee, and Meredith H. Fairchild, Jr., survive.

Soap Sales Set New Record

Sales of soap by American manufacturers for the first nine months of 1941 were higher than any other like period in the past seven years, according to figures just released by the Association of American Soap & Glycerine Producers, Inc., New York. In the nine months ended September 30, 1941, manufacturers' soap sales in the United States (tabulated from reports from 79 manufacturers estimated to produce about 90 per cent of all soap made and sold in the United States) totaled $256,886,001, or the equivalent of an ordinary full year's sales. For three successive quarters in 1941, soap sales have been substantially higher than the average quarter of the five years, 1935 through 1939. The 1941 third quarter sales of $86,096,061 were 5.1 per cent below the 1941 second quarter, 30.1 per cent above the third quarter of 1940, and 42.8 per cent above the average quarter.

A breakdown of total sales shows that 1941 third quarter sales of soap other than liquid were 811,798,624 pounds, which was 8.9 per cent below the 1941 second quarter, 17.7 per cent above the 1940 third quarter, and 29.2 per cent above the average quarter. In dollars, the 1941 third quarter sales of soap other than liquid amounted to $85,498,673, or 5.1 per cent below the 1941 second quarter, 30.0 per cent above the 1940 third quarter, and 42.7 per cent above the average quarter. The 1941 third quarter liquid soap sales, reported at 671,696 gallons, were 5.8 per cent below the 1941 second quarter, 45.6 per cent above the 1940 third quarter and 56.0 per cent above the average quarter. The liquid soap delivered in the 1941 third quarter was valued at $597,388, or 4.1 per cent below the 1941 second quarter, 40.0 per cent above the 1940 third quarter and 49.8 per cent above the average quarter.

Lever, Ltd. Sponsors Education

Employees of Lever Brothers, Ltd., Toronto, may now take university extension courses in selected subjects, without cost, at the University of Toronto, under a new program of adult education initiated by Lever Brothers. The company pays the tuition fees of all employees who take advantage of the offer, and the University provides evening lectures in selected subjects.

Dow Adds to Aromatic Line

Dow Chemical Co., Midland, Mich., recently added four new items to its line of aromatic chemicals, a particularly timely development in view of the shortage of certain imported materials which they are able to replace in perfume formulations. The new materials now being produced by Dow are: indol, diphenyl methane, styrallyl acetate (methylphenylcarbinol acetate), and styrene P-100 (perfume grade). For many years, Dow has been supplying large quantities of methyl anthranilate, coumarin, phenylethyl alcohol and diphenyl oxide (special perfume grade) to the trade. C. C. Noble, at the Midland office, is in charge of national sales of the new products for the company, while J. A. Dorland, of the New York office, is in charge of sales in the Eastern territory.

Ungerer & Co. to Move

Ungerer & Co., perfuming materials, New York, have just leased the fourth floor of the Butterick building, 161 Sixth Ave., and will move into the new quarters the latter part of December. The one floor will give Ungerer somewhat more space than they now occupy at the present location at 15 West 20th St. In addition to the offices, the perfume compounding and control laboratory will be moved to the new quarters. Main stocks of bulk materials will continue to be carried at the company's five-story warehouse at 226 West 20th St.

Name Beach to Lever Board

D. W. Beach has just been named to the board of directors of Lever Brothers, Toronto, as director in charge of advertising.

DCAT Names Exec. Comm.

The Drug, Chemical and Allied Trades section of the New York Board of Trade held its 51st annual meeting and election at the Drug and Chemical Club, New York, November 18. The following members were elected to the executive committee for the coming year: Carl M. Anderson, Merck & Co.; Harold M. Altshul, Katchum & Co.; C. C. Caruso, Schieffelin & Co.; James J. Clark, Liggett Drug Co.; Hugh Crosson, McKesson & Robbins, Inc.; James DeCesare, White Laboratories, Inc.; William W. Huisking, Chas. L. Huisking & Co.; J. H. Karrh, Victor Chemical Works; Elvin H. Killheffer, E. I. du Pont de Nemours & Co.; Paige D. L'Hommedieu, Johnson & Johnson; Robert B. Magnus, Magnus, Mabee & Reynard, Inc.; Guy L. Marsters, Norwich Pharmacal Co.; S. B. Penick, Jr., S. B. Penick & Co.; Robert J. Quinn, Mathieson Alkali Works; J. P. Remensnyder, Heyden Chemical Works; Carroll Dunham Smith, Carroll Dunham Smith Pharmacal Co.; Ira Vandewater, R. W. Greeff & Co.; Lloyd I. Volckening, Ivers-Lee Co.; E. T. T. Williams, Becton, Dickinson & Co.; Victor E. Williams, Monsanto Chemical Co.

Francis J. McDonough, president of New York Quinine & Chemical Works, was re-elected the section's representative on the board of directors of the New York Board of Trade. The officers of the section for the coming year will be elected from the members of the executive committee at its first meeting, December 2.

Elect P&G Man Cheviot Mayor

Edward C. Gingerich, of the printing department of Procter & Gamble Co., Cincinnati, has just been elected mayor of Cheviot, Ohio, a suburb of Cincinnati. Mr. Gingerich defeated the incumbent mayor who had been in office for 22 years.

Grocery Manufacturers Meet

The 33rd annual convention of the Associated Grocery Manufacturers of America was held November 5-6-7 at the Waldorf-Astoria Hotel, New York.

CONTRACTS AWARDED

Army Awards

In a recent opening by the Army Quartermaster Corps, Atlanta, the following companies were awarded contracts: Wonder Chemical Co., Bklyn., 10,000 pts. polish at 7.49c per pt.; Fels & Co., Phila., 1,175,000 lbs. soap at 5.1c lb.; Eagle Soap Co., Bklyn., 200,000 cakes soap at 2.75c and 200,000 cakes at 2.45c; Tennessee Soap Co., Memphis, 825,000 lbs. soap at 4.92c lb.; Colgate-Palmolive-Peet Co., Jersey City, 200,000 lbs. chip soap at 11.64c and 150,000 cakes toilet soap at 1.2633c; Carl E. Schaad, Easton, Pa., 50,000 lbs. trisodium phosphate at 5.2c per lb.

Soap Awards

In a recent opening by the Army Quartermaster Corps, Chicago, Haskins Bros. Co., Omaha, was awarded a contract for 500,000 cakes toilet soap at $17,180. In another opening the same company was awarded a contract for an additional 500,000 cakes toilet soap at 3.436c ea. At an opening for Patterson Field, Ohio, James Good, Phila., was awarded a contract for 1,000 cakes grit soap at 3.8c and Armour & Co., Chicago, a contract for 12,000 cakes hand soap at 3.25c.

Army Qtm. Awards

The following recent awards were made by the Army Quartermaster, Ft. Sam Houston, Texas: Wonder Chemical Co., Bklyn., 5,000 pts. metal polish at 8.49c pt.; Haskins Bros. & Co., Omaha, 5,000 lbs. chip soap at 10.98c lb.; Day & Frick, Phila., 90,000 cakes grit soap at 2.9c ea. and 12,500 cakes at 2.3c ea.; Unity Sanitary Supply Co., New York, 108,000 lbs. trisodium phosphate, 5c lb.

Engineer Soap Award

In a recent opening by the Army Engineer Corps, Memphis, Procter & Gamble Dist. Co., Memphis, was awarded a contract for 300 boxes laundry soap at $915.

Insecticide Awards

Puritan Chemical Co., Atlanta, was awarded a contract for 20 drums phenol larvicide at $70.40 in a recent opening by the Army Quartermaster Corps, Ft. Benning, Ga. In the same opening, Greenpoint Laboratories, Bklyn., was awarded a contract for 1 drum "Gulf" spray at $35.

Rust Preventive Award

E. F. Houghton & Co., Phila., was awarded a contract for 7,200 lbs. rust-preventive compound at 5.7c per lb. in a recent opening by the Army Quartermaster at Jersey City.

Soap Powder Award

In a recent opening by the Army Ordnance Supplies, Benicia Arsenal, Calif., R. M. Hollingshead Corp., Camden, was awarded a contract for 40,000 lbs. leather soap at 11.6c per lb. and 1,000 lbs. scouring powder at 4.73c can.

Engineer Corps Award

In a recent opening by the Army Engineer Corps, Phila., Stevens Soap Corp., Bklyn., was awarded a contract for 4,800 pkgs. soap powder at 3.39c.

Scouring Powder Award

Fishers Products Corp., Washington, D. C., was awarded a contract for 10,800 lbs. scouring powder at 2.2c lb. in a recent opening by the Army Ordnance Supplies, Picatinny Arsenal, N. J.

Air Corps Awards

In a recent opening by the Army Air Corps Supplies, Wright Field, Ohio, McAleer Mfg. Co., Detroit, was awarded a contract for 8,988 qts. liquid airplane polish at 16.65c. In the same opening, R. M. Hollingshead Corp., Camden, N. J., was awarded a contract for 7,620 qts. liquid furniture polish at 16.9c.

Navy Yard Award

Crystal Soap & Chemical Co., Phila., was awarded a contract for 13,500 lbs. rust-preventive compound at $783 in a recent opening by the Phila. Navy Yard.

Larvacide Award

Puritan Chemical Co., Atlanta, was awarded a contract for 550 gal. phenol larvacide at $1.28 gal. in a recent opening by the Army Quartermaster Supplies, Ft. Benning, Ga.

Glycerine Award

Conray Prods. Co., New York, was awarded a contract for 1,000 gals. glycerine at $2.84 in a recent opening by Army Ordnance Supplies, Augusta Arsenal, Ga.

Mich. Alkali Appoints

Ransdell Matthews, formerly vice-president of Natural Soda Products Co., and Emeryville Chemical Co., was recently appointed assistant to I. H. Taylor, vice-president in charge of sales of Michigan Alkali Co., Detroit. Michigan Alkali also announced the appointments of Bert Cremers as director of sales, and J. H. Remick as manager of the special products division of the company. Mr. Cremers formerly had the title of sales manager. The appointments were announced at the company's November sales meeting at Detroit.

Salesmen's Party Dec. 18

The annual Christmas Party of the Salesmen's Association of the American Chemical Industry, will be held Thursday, December 18, on the Starlight Roof of the Waldorf-Astoria, New York. Reservations should be made through Phil LoBue, c/o Michigan Chemical Corp., Jersey City; phone: BErgen 4-1716. Tickets for the party are $8.00 per person. This includes open house at the bar, where activities will commence at 6:00 p.m., dinner and floor show following the dinner.

NEW TRADE MARKS

The following trade-marks were published in the November issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

REVOMETICS — This in solid letters describing shampoo. Filed by Dermetics, Inc., Seattle. Sept. 30, 1941. Claims use since Aug. 20, 1941.

AKUSAKA—This in broken letters describing synthetic wax. Filed by T. G. Cooper & Co., Phila., Aug. 22, 1941. Claims use since Oct. 13, 1939.

TARGET—This in script letters over drawing of target describing soap and cleaners. Filed by Chemical Mfg. & Dist. Co., Easton, Pa., Dec. 20, 1940. Claims use since Apr. 1, 1939.

MAN-U-SOL — This in solid letters describing liquid soap. Filed by E. J. Scarry & Co., Denver, Sept. 23, 1941. Claims use since June 6, 1941.

OLD NIK—This in solid letters inside fanciful drawing describing insecticides. Filed by Robert Cheney Slater, Jacksonville, Fla., Apr. 14, 1941. Claims use since Nov. 29, 1938.

HEMODINE—This in solid letters describing germicide. Filed by Mizzy, Inc., New York, Aug. 7, 1941. Claims use since July 30, 1941.

THOR-O-COTE—This in solid letters inside ray design describing auto cleaner and polish. Filed by Thoro Products Co., Chicago, Aug. 23, 1941. Claims use since Oct. 10, 1939.

MINUET—This in script letters describing cleanser. Filed by Knomark Mfg. Co., Bklyn., Aug. 1, 1941. Claims use since July 28, 1941.

DENTOL—This in solid letters describing mouth wash. Filed by Dr. Edwin H. Dixon, New York, Aug. 28, 1941. Claims use since 1902.

VAPO-TONE—This in solid letters describing parasiticides. Filed by California Spray-Chemical Corp., Wilmington, Dela., Sept. 12, 1941. Claims use since Aug. 21, 1941.

DUNHAM'S — This in shaded letters inside fanciful illustration describing wash cubes. Filed by National Chemical Co., Detroit, Feb. 5, 1940. Claims use since Aug. 25, 1939.

DIP-WIPE—This in shaded letters inside fanciful design describing silver polish. Filed by Snap Chemical Co., Chicago, Mar. 25, 1941. Claims use since Mar. 6, 1941.

NU-COR—This in block letters describing detergent. Filed by National Home Products, New York, Apr. 26, 1941. Claims use since Apr. 9, 1941.

395—This in solid letters describing rust remover. Filed by Ensign Prods. Co., Cleveland, Apr. 18, 1941. Claims use since Sept. 18, 1940.

WY-KLEAR — This in broken letters describing cleaner. Filed by General Chemical Co., New York, May 6, 1941. Claims use since Apr. 17, 1941.

FUNGUSOL—This in script letters describing fungicide. Filed by Destruxol Corp., Pasadena, Calif., May 21, 1941. Claims use since Apr., 1927.

PREMEER—This in solid letters describing mothproof. Filed by Destruxol Corp., Pasadena, Calif., May 21, 1941. Claims use since Nov. 29, 1933.

FUNGUSIN—This in solid letters describing fungicide. Filed by S. Pfeiffer Mfg. Co., St. Louis, Sept. 6, 1941. Claims use since Aug. 27, 1941.

FORMULA 20 SHAMPOO—This in solid letters describing shampoo. Filed by Valentine Laboratories, Chicago, Sept. 11, 1941. Claims use since Mar., 1941.

VAULTEX—This in script letters describing cleaner and polisher. Filed by General Vault Prods. Co., Cincinnati, Sept. 2, 1941. Claims use since Aug. 28, 1941.

REPRESENTATION — Drawing of building exterior inside circle describing cleaner and polisher. Filed by General Vault Prods. Co., Cincinnati, Sept. 2, 1941. Claims use since Aug. 28, 1941.

Q-CO ANNITE—This in solid letters describing soap cake. Filed by Quigley Co., New York, Sept. 4, 1941. Claims use since June 29, 1940.

LINAL LINAL—This in solid and descending letters describing soap. Filed by National Soap and Refining Co., Des Moines, Sept. 6, 1941. Claims use since July, 1940.

REPRESENTATION — Carton with drawing of mortar and pestle between two bars describing shampoos, antiseptics and toothpaste. Filed by J. K. Laboratories, Passaic, N. J., June 13, 1940. Claims use since Apr. 1, 1938.

VAPO-SUL—This in solid letters describing parasiticides. Filed by California Spray-Chemical Corp., Wilmington, Aug. 19, 1941. Claims use since July 31, 1941.

OZARKO—This in solid letters describing foot disinfectant. Filed by Crow Chemical Co., Hot Springs, Ark., Sept. 18, 1941. Claims use since Apr. 6, 1939.

EPPY—This in double letters describing motor cleaning compound. Filed by Epco Chemical Co., Quincy, Mass., Sept. 20, 1941. Claims use since Dec. 31, 1938.

Trade Marks Granted

391,115. Soaps. Elizabeth Arden Sales Corp., New York. Filed June 24, 1941. Serial No. 444,785. Published Aug. 12, 1941. Class 4.

390,965. Saponaceous bubble bath. Eaton Laboratories, Chicago.

Filed May 26, 1941. Serial No. 443,934. Published Aug. 5, 1941. Class 4.

390,966. Saponaceous bubble bath. Eaton Laboratories, Chicago. Filed May 26, 1941. Serial No. 443,935. Published Aug. 5, 1941. Class 4.

390,983. Cleaner. Mystic Foam Corp., Cleveland. Filed June 6, 1941. Serial No. 444,271. Published Aug. 5, 1941. Class 4.

391,057. Soap. Coffette Co., Long Island City. Filed Mar. 6, 1941. Serial No. 441,277. Published Aug. 12, 1941. Class 4.

391,066. Lens cleaning fluid. Guild of Prescription Opticians of America, Phila. Filed Apr. 22, 1941. Serial No. 442,846. Published June 24, 1941. Class 4.

391,068. Shaving cream. Stub Co., Bklyn. Filed Apr. 24, 1941. Serial No. 442,920. Published Aug. 12, 1941. Class 4.

391,091. Cleaner. Atlantic Refining Co., Phila. Filed May 27, 1941. Serial No. 443,969. Published Aug. 12, 1941. Class 4.

391,114. Cleaning solvent. Standard Oil Co. of Calif., Wilmington, Dela. Filed June 18, 1941. Serial No. 444,660. Published Aug. 12, 1941. Class 4.

390,776. Moth-proof. Canusa Corp., Arlington, N. J. Filed June 12, 1940. Serial No. 432,929. Published July 22, 1941. Class 6.

390,777. Detergent. Canusa Corp., Arlington, N. J. Filed June 12, 1940. Serial No. 432,930. Published July 22, 1941. Class 6.

390,780. Foot powder. Ter-O-Sul Products Co., New York. Filed Aug. 20, 1940. Serial No. 435,184. Published July 29, 1941. Class 6.

390,820. Floor wax. Great Atlantic & Pacific Tea Co., New York. Filed Apr. 22, 1941. Serial No. 442,844. Published July 29, 1941. Class 16.

390,825. Surfacing wax. Fuld Bros., Baltimore. Filed Apr. 29, 1941. Serial No. 443,078. Published July 29, 1941. Class 16.

390,837. Insecticides and fungicides. Sherwin-Williams Co., Cleveland. Filed May 8, 1941. Serial No. 443,375. Published July 29, 1941. Class 6.

390,826. Soap. Hewitt Soap Co., Dayton. Apr. 29, 1941. Serial No. 443,082. Published July 29, 1941. Class 4.

390,838. Insecticides. Corkins Chemical Co., Cincinnati. Filed May 9, 1941. Serial No. 443,405. Published July 22, 1941. Class 6.

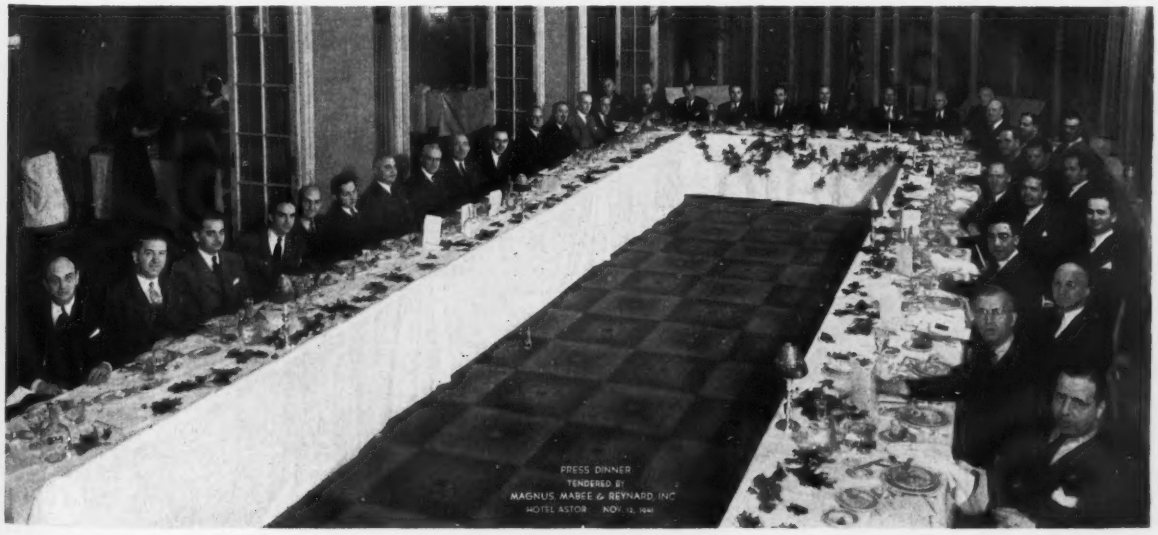
390,855. Insect repellant. American Drug & Chemical Co., Minneapolis. Filed May 20, 1941. Serial No. 443,678. Published July 29, 1941. Class 6.

M. M. & R. Dine Press

Magnus, Mabee & Reynard, Inc., New York, tendered their annual dinner to the editors, publishers, and advertising representatives of the trade press at the Hotel Astor, New York, on Nov. 12. About fifty representatives of the press and executives of M. M. & R. attended this traditional annual dinner. Joseph B. Magnus, vice-president of the company, acted as host and toastmaster, assisted by Robert C. Magnus.

Percy C. Magnus, president of M. M. & R., who commuted between the party of his own company and two other dinners in the hotel where he was a speaker, addressed the gathering, outlining the trying times which American manufacturers are facing today. "There are," he said, "shortages of many essential oils but American ingenuity will and is finding replacements for such products. The 'Made in U.S.A.' label is gaining importance and what is more, this label today identifies many perfume and flavor oils produced as substitutes but which are so good that I doubt that there will be much need for originals when conditions make them available again."

Sidney Matthew Weiss, vice-president of A. W. Lewin Co. and advertising counsel of M. M. & R., also spoke and announced that in spite of material shortages and a booming sellers' market, M. M. & R. plans for 1942 call for an extension of their advertising in the trade press as the most direct, least expensive and most effective way of presenting facts to industry. He discussed advertising as one of the strongest forces in aiding the expansion and stabilization of industry.



That's what she heard Daddy say when he put Mobil Freezone in *his* car. It's good advice for all car-owners.

Socony Vacuum Oil Company, Inc. . . . maker of Mobil Freezone . . . packs the well-known anti-freeze compound in Crown Cans that are as attractive as they are sturdy . . . as effective when on display as they are protective during shipment.

Probably no company has had greater opportunity to compare the quality of metal containers than Socony Vacuum whose market is worldwide.

Their choice of Crown Cans for Mobil Freezone is one more recognition of Crown's dependability by a major operator. Have you looked into Crown's facilities, as applied to *your* operations?

CROWN CAN COMPANY, PHILADELPHIA, PA., *Division of Crown Cork and Seal Company,* Baltimore · St. Louis · Houston · Madison · Orlando · Fort Wayne · Nebraska City

INDEPENDENT AND HELPFUL

CROWN CAN

RAW MATERIAL MARKETS

As of November 25, 1941

NEW YORK — The placing of synthetic and coal tar phenols, cresylic acids, cresols and xylenols, either in pure or crude form and various mixtures of these chemicals on a basis of complete allocation to users, in place of present priorities, to become effective December 1, was a development of importance to manufacturers of sanitary products during the month. After December 1, no deliveries of these materials may be made except under specific instructions from the Priorities division of OPM. The market for fats and oils remained generally quiet throughout the month with buyers holding off or limiting their purchases to small quantities pending further developments in Washington in the matter of price, tax and other legislation, and in the war situation. Prices of tallow, grease, soybean oil, corn oil, cottonseed oil, and linseed oil were reduced slightly from a month ago, while prices of essential oils and aromatic chemicals continued to move in a generally upward trend. Lanolin was advanced 7 cents a pound late in the period. Among insecticide raw materials, some sellers advanced the price of red squill, while other sellers advanced their quotations slightly on pyrethrum powder, pyrethrum extract, and rotenone bearing materials.

Animal Fats

The market for animal fats and greases remained steady throughout the month with sales at 8⅝ cents a pound, fob, N. Y., for extra tallow, and yellow grease at 8⅜ cents. As shown by government figures for the third quarter of 1941, production of inedible tallow increased almost 24 per cent over 1940, while consumption during the third quarter increased almost 45 per cent over 1940, consumption exceeding production by 48 per cent, during the quarter.

Vegetable Oils

Prices of domestic vegetable oils dropped slightly during the month, corn oil, cottonseed oil, soybean oil, and linseed oil all being quoted currently somewhat below a month ago, while imported vegetable oils were advanced slightly in price as compared with the situation a month ago. Coconut oil in tanks on the Pacific coast is now being quoted nominally at 6¾ cents a pound, with copra quoted at $3.45 cwt., buyer to provide the space, and $4.00 to $4.10 cwt., seller's space. Resale Sumatra palm oil in tanks, N. Y., is now quoted at a nominal level of from 7½ cents to 7¾ cents a pound, first hand offerings being limited or absent. Statistics from the Bureau of the Census, U. S. Department of Commerce, show stocks of crude coconut oil, as of September 30, 1941, totaled 186,290,000 pounds, as compared with 209,670,000 on the same 1940 date. Stocks of crude palm oil were 117,371,000 pounds as compared with 150,689,000 pounds in 1940.

Essential Oils

Growing raw material shortages brought a new crop of price advances among essential oils and aromatic chemicals this month, materials going to higher levels including oil of bay, oil of cassia, oil of peppermint, oil of pineneedle Siberian, oil of rosemary, oil of anise, oil of cedarleaf, oil of cedarwood, oil of eucalyptus, oil of hemlock, oil of juniper tar, oil of spike lavender, oil of spearmint, oil of vetiver Java, oil of caraway, oil of geranium, oil of lemongrass, and others. Higher prices among the aromatic chemicals were noted on eucalyptol, hydroxycitronella, and thymol.

Insecticide Materials

Prices on red quill were advanced during the month by some sellers to 68 cents a pound, the change being attributed to the situation in North Africa and the removal of General Weygand which brought to an end the barter agreement between the United States government and the British and Vichy authorities. Other sellers continued to quote red quill at 50 to 60 cents a pound, however. Pyrethrum extract, 20 to 1, was also advanced slightly during the month to a level of $4.30 to $4.40 a gallon. Increases in war risk insurance rates were said to be factors behind the advance on pyrethrum. Prices on derris and cube powder were advanced 2 cents a pound by some sellers.

USED DRUMS PUT UNDER CEILING

Prices of second-hand steel drums were curbed sharply November 25, when price schedule No. 43, setting price ceilings on used containers was announced by the OPA. Schedule becomes effective December 1. As compared with a price of $2.72 for new containers, reconditioned steel drums of 55-gallon capacity have been selling for $3.50 to $4.50. The ceiling price is $2.25 for used containers of this type. Provisions are made in the schedule for transportation charges. It also covers steel drums ranging from 15 to 110 gallons, light or heavy gauge steel, and drums in a "raw" condition.

RAW MATERIAL PRICES

(As of November 25, 1941)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C.P., drums	lb.	$ .08½	$ .09½
Acid, Boric, bbls., 99½%	ton	96.00	128.00
Cresylic, drums	gal.	.76	.83
Low boiling grade	gal.	.76	.83
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, drums	lb.	.29	.31
Anhydrous, drums	lb.	.30	.32
Alcohol, Ethyl, U.S.P., bbls.	gal.	7.92½	7.99
Complete Denat., SD1, dms., ex.	gal.	.33½	.38½
Alum. Potash lump, bbls.	lb.	.04	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	—
Bentonite, 1, works, 325 mesh	ton	16.00	—
Bentonite, 2, works, 200 mesh	ton	11.00	—
Bleaching Powder, drums	100 lb.	2.00	3.35
Borax, pd., cryst., bbls., kegs	ton	55.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	1.10
L. C. L.	gal.	.73	1.20
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	16.00
Cresol, U.S.P., drums	lb.	.10¼	.11¼
Creosote Oil	gal.	.13½	.14½
Feldspar, works (200 to 325 mesh)	ton	32.00	35.00
Formaldehyde, bbls.	lb.	.05½	.06
Fullers Earth	ton	15.00	—
Glycerine, C.P., drums	lb.	.18¼	.19¼
Dynamite, drums	lb.	.18¼	.18¾
Saponification, drums	lb.	.12¾	.14¾
Soap, lye, drums	lb.	.11½	—
Hexalin, drums	lb.	.23	—
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	ton	6.25	13.00
Mercury Bichloride, kegs	lb.	2.24	—
Naphthalene, ref. flakes, bbls.	lb.	.08	.08½
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorbenzene, drums	lb.	.11	.13½
Petrolatum, bbls. (as to color)	lb.	.03½	.08
Phenol (Carbolic Acid) drums	lb.	.12½	.14¾
Pine Oils, bbls.	gal.	.65	.68
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07¼
Liquid, 45% basis	lb.	.02⅞	.03¾
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.02⅞	.03¼
Pumice Stone, powder	lb.	.04	.05
Rosins (net wt., ex yard, New York)—			
Grade D to H	100 lb.	3.55	3.55
Grade I to N	100 lb.	3.55	3.70
Grade WG to X	100 lb.	3.86	3.90
Wood, ex. dock	100 lb.	3.12	4.03
Rotten Stone, pwd., bbls.	lb.	.12¾	.18¾
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.28	.38
Olive Castile, powder	lb.	.33	.40
Powdered White, Neutral	lb.	.18	.24
Olive Oil Foot, bars, 68-70%	lb.	—	—
Green, U.S.P.	lb.	.09	.10
Tallow Chips, 88%, car lots	lb.	.10½	.11⅛
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.05	1.45
Carlots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.92½	1.95
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	14.20	23.20
Sodium Fluoride, bbls.	lb.	.08	.09¼
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, anhyd.	100 lb.	4.00	5.30
Granulated	100 lb.	2.50	3.55
Sodium Pyrophosphate	100 lb.	5.10	5.60
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.29½
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	100 lb.	2.85	3.60
Zinc Oxide, lead free	lb.	.06½	.07

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.10⅛	Nom.
Castor, No. 1, bbls.	lb.	.13¼	.14¼
No. 3, bbls.	lb.	.13	.14
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.07½	Nom.
Tanks, Pacific Coast, futures	lb.	.06¾	Nom.
Copra, bulk, coast	lb.	.0345	Nom.
Corn, tanks, West	lb.	.11	.11¼
Cottonseed, crude, tanks, mill	lb.	.11	.11⅜
PSY, futures	lb.	.12½	.12¾
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.14¼	.14½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.15¾	.16
Cotton Oil, tanks, Chicago	lb.	.13½	.13¾
Settled soap stock, Chicago	lb.	.03½	.03⅝
Boiled soap stock, 65%, Chi.	lb.	.04½	.04⅝
Foots, 50%, Chicago	lb.	.03½	.03¾
Red Oil, bbls., dist. or sapon.	lb.	.12	.13½
Tanks	lb.	.11¼	—
Stearic Acid, saponif.			
Double pressed	lb.	.14¼	—
Triple pressed	lb.	.17	—
Greases, choice white, tanks	lb.	.09	—
Yellow	lb.	.08⅜	—
Lard, city, tubs	lb.	.11⅛	.11¼
Linseed, raw, bbl.	lb.	.1000	.1020
Tanks, raw	lb.	.0910	.0930
Olive, denatured, bbls., N. Y.	gal.	4.00	Nom.
Foots, bbls., N. Y.	lb.	.17	.17½
Palm, Sumatra, cif. New York, tanks	lb.	.07½	.07¾
Palm, kernel, f.o.b. San F.	lb.	—	Nom.
Peanut, crude, tanks	lb.	.11⅝	.11⅞
Soya Bean, domestic, tanks, crude	lb.	.09¾	.10
Stearin, oleo, bbls.	lb.	.10¼	.10½
Tallow, special, f.o.b. N. Y.	lb.	.08½	—
City, ex. loose, f.o.b. N Y.	lb.	.08⅝	—
Teaseed Oil, crude	lb.	.28	Nom.
Whale, refined	lb.	.1070	Nom.

(As of November 25, 1941)

Essential Oils

Almond, Bitter, U.S.P.	lb.	$3.50	$3.75
Bitter, F.F.P.A.	lb.	4.75	5.00
Sweet, cans	lb.	2.25	2.50
Anise, cans, U.S.P.	lb.	1.10	1.15
Bay, 55-66% phenols, cans	lb.	1.35	1.60
Bergamot, coppers	lb.	20.00	Nom.
Artificial	lb.	2.95	9.25
Birch Tar, rect., cans	lb.	1.50	2.00
Crude, cans	lb.	.90	.95
Bois de Rose, Brazilian	lb.	4.00	4.25
Cayenne	lb.	—	—
Cade (juniper tar), cans	lb.	.72	.95
Cajeput, native, cans	lb.	1.15	1.20
Calamus, cans	lb.	—	—
Camphor, Sassy, drums	lb.	.27	Nom.
White, drums	lb.	.30	Nom.
Cananga, native, cans	lb.	12.00	12.50
Rectified, cans	lb.	13.00	13.50
Caraway Seed	lb.	15.00	Nom.
Cassia, Redistilled, U.S.P.	lb.	7.75	Nom.
Cedar Leaf, cans	lb.	1.10	1.40
Cedar Wood, light, drums	lb.	.33	.34
Citronella, Java, drums	lb.	.75	.80
Citronella, Ceylon, drums	lb.	.85	.90
Clove, U.S.P., cans	lb.	1.35	1.40
Eucalyptus, Austl., U.S.P., cans	lb.	.75	.80
Fennel, sweet, cans	lb.	2.50	2.75
Geranium, African, cans	lb.	17.00	Nom.
Bourbon, cans	lb.	17.00	Nom.
Turkish (Palmarosa)	lb.	3.25	3.50
Hemlock, tins	lb.	.95	1.15
Lavender, 30-32% ester, cans	lb.	—	—
Spike, Spanish, cans	lb.	2.85	3.10
Lemon, Ital., U.S.P.	lb.	5.50	Nom.
Cal.	lb.	3.25	—
Lemongrass, native, cans	lb.	2.25	2.30
Linaloe, Mex., cases	lb.	3.50	3.75
Nutmeg, U.S.P., cans	lb.	2.15	2.65
Orange, Sweet, W. Ind., cans	lb.	4.75	6.00
Italian cop	lb.	8.00	Nom.
Distilled	lb.	1.60	—
California, expressed	lb.	3.00	—
Origanum, cans, tech	lb.	2.85	2.90
Patchouli	lb.	5.25	6.25
Pennyroyal, dom.	lb.	2.50	2.65
Imported	lb.	2.40	2.50
Peppermint, nat., cans	lb.	4.50	5.00
Redis., U.S.P., cans	lb.	4.75	5.25
Petitgrain, S. A., cans	lb.	1.70	1.75
Pine Needle, Siberian	lb.	2.60	2.70
Rosemary, Spanish, cans	lb.	1.45	1.55
drums	lb.	1.40	1.50
Sandalwood, E. Ind., U.S.P.	lb.	5.40	5.50
Sassafras, U.S.P.	lb.	1.05	1.20
Artificial, drums	lb.	—	—
Spearmint, U.S.P.	lb.	2.75	2.80
Thyme, red, N. F.	lb.	1.85	2.25
White, N. F.	lb.	1.95	2.50
Vetiver, Java	lb.	18.00	Nom.
Ylang Ylang, Bourbon	lb.	—	—

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.55	$1.60
Amyl Cinnamic Aldehyde	lb.	1.90	2.00
Anethol	lb.	1.15	1.20
Benzaldehyde, tech.	lb.	—	Nom.
N. F. VI	lb.	—	—
Benzyl, Acetate	lb.	.55	.59
Alcohol	lb.	.63	.68
Citral	lb.	3.00	4.00
Citronellal	lb.	1.50	Nom.
Citronellol	lb.	1.75	Nom.
Citronellyl Acetate	lb.	4.00	Nom.
Coumarin	lb.	2.75	3.25
Diphenyl oxide	lb.	.43	.50
Eucalyptol, U.S.P.	lb.	1.50	1.60
Eugenol, U.S.P.	lb.	2.40	2.50
Geraniol, Soap	lb.	1.10	1.50
Other grades	lb.	1.50	3.50
Geranyl Acetate	lb.	1.50	2.50
Heliotropin	lb.	4.25	5.00
Hydroxycitronellal	lb.	5.90	Nom.
Indol, C. P.	lb.	32.00	34.00
Ionone	lb.	2.75	3.95
Isoborneol	lb.	.90	1.07
Iso-bornyl acetate	lb.	.80	.95
Iso-Eugenol	lb.	2.90	4.25
Linolool	lb.	5.00	7.50
Linalyl Acetate	lb.	3.00	Nom.
Menthol, natural	lb.	8.00	8.50
Synthetic, U.S.P.	lb.	—	—
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	—	—
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.40
Musk Ambrette	lb.	3.75	4.20
Ketone	lb.	3.90	4.35
Xylol	lb.	1.15	1.55
Phenylacetaldehyde	lb.	4.00	Nom.
Phenylacetic Acid	lb.	1.85	Nom.
Phenylethyl Alcohol	lb.	2.10	2.50
Rhodinol	lb.	30.00	35.00
Safrol	lb.	1.25	1.50
Terpineol, C.P., drs.	lb.	.27	—
Cans	lb.	.30	—
Terpinyl Acetate, 25 lb. cans	lb.	.80	.85
Thymol, U.S.P.	lb.	3.00	—
Vanillin, U.S.P.	lb.	2.50	2.75
Yara Yara	lb.	1.45	1.50

Insecticide Materials

Insect Powder, bbls.	lb.	.20	.22
Pyrethrum Extract			
5 to 1	gal.	1.15	1.20
20 to 1	gal.	4.30	4.40
30 to 1	gal.	6.40	6.50
Derris, powder—4%	lb.	.31	.35
Derris, powder—5%	lb.	.34	.38
Cube, powder—4%	lb.	.31	.34
Cube, powder—5%	lb.	.34	.37
Squill, red, dried	lb.	.50	.68

Waxes

Bees, white	lb.	.56	.58
African, bgs.	lb.	—	—
Refined, yel.	lb.	.51	.52
Candelilla, bgs.	lb.	.30	.33
Carnauba, No. 1, yellow	lb.	.86	.87
No. 2, N. C.	lb.	.84	.85
No. 3, Chalky	lb.	.74	.76
Ceresin, yellow	lb.	.12½	.17
Montan Wax, bags	lb.	.45	.46
Paraffin, ref., 125-130	lb.	.0570	—

PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Applications of Alkalies

ALKALIES—both caustic soda and alkaline salts—are used extensively in widely varied types of industrial cleaning. For cleaning wool, soda ash is probably used most. Wool containing less than 10 per cent of grease will not stand a pH much above 9.5, hence caustic soda can only be used for preliminary scouring, the final 10 per cent of grease being removed by baths of pH about 9. The first treatments are cold soaks to remove gross mineral and soil impurities. The suint, which is a complex mixture of nitrogenous substances, fatty and other acids and their potassium salts, is usually slightly acid, but sometimes is alkaline. It is in itself a useful medium for the emulsification of the lanoline, provided that it is on the alkaline side; the optimum pH is about 9, and to maintain this, soda ash is added. A considerable amount of grease is removed in this bath.

The major part of the remaining grease is removed in the next stage, a wash with warm soap solution (pH about 10) of average concentration of 0.2 per cent, with 0.1 per cent of soda. A further soap solution bath followed by rinses is the usual sequence. Wetting agents are now often added to these baths. The pH is extremely important since a combination of the wool with alkali definitely lowers the strength of the former. This combination amounts to 0.54 per cent in a solution of pH 9.94.

Bottle Washing

In bottle washing, a pre-rinse of plain water, usually recovered from a later rinsing stage, is applied to the container to remove water-soluble waste and the larger solid and less firmly attached material. Usually such a pre-rinse is by jetting of water warmed to 80-110° F. Detergent treatment may consist of one or more soaks in strongly alkaline solution, the containers moving through, emptying their contents back into the solution before passing to the next. One to three such soaks are used, the temperature rising in each case. With two or more soaks, 160° F. is reached. In many automatic washers, a soak of detergent may be followed by a jetting with another detergent solution, usually of different strength and often of different composition.

In a detergent soak, the alkalies loosen the dirt and the organisms associated with it, and these eventually leave the surface of the bottle when the latter drains or is rinsed. Some organisms take as long as 30 minutes to kill in hot, strong caustic soda solution, for example *B. metiens*. If the organism is to be killed on the bottle surface, the soak would require this length of time. If, however, the organism is removed from the surface into the bulk solution, it will then have an infinite period of contact with the latter and killing ultimately results. Clean water is important for rinses.

The basis of most bottle-washing detergents is caustic soda. It is a good sterilizer and a good remover of dirt once the deposit is wetted. It also neutralizes the acids usually present in food residues; for this it requires suitable buffering to maintain a high pH. A working minimum of pH value for a bottle-washing solution is 11.0. Caustic soda is a poor wetting and emulsifying agent and this problem is overcome by careful blending of alkalies. It is not a good rinser and blending is necessary to nullify this defect.

Metal Cleaning

An experimental study of the time and temperature required for the removal of paraffin oil and vegetable oil from standard brass discs under controlled conditions, included the use of caustic soda, soda ash, trisodium phosphate, borax, sodium metasilicate, silicate of soda 130°

Tw., sodium orthosilicate, sodium sesquisilicate, and sodium orthosilicate from metasilicate and caustic soda. Of these the silicates alone are outstanding, and compare with values for soaps.

Vegetable oil was always removed more quickly than mineral oil, as might be expected. Increasing the temperature from 140 to 200° F. and the concentration from 5 to 10 per cent resulted in more rapid cleaning. Of the whole series, optimum speed of both mineral-oil and vegetable-oil removal occurred with 10 per cent of sodium orthosilicate at 200° F., the time being 3.7 minutes for mineral oil and two minutes for vegetable oil under the test conditions.

A number of miscellaneous uses are mentioned, such as the application of alkalies in automatic dishwashing, domestic washing powders, hair shampoos, etc. P. D. Liddiard. *Chemistry and Industry* **60,** 684-8 (1941).

—— • ——

Titration of Soap

The glass electrode is more suitable than the antimony or hydrogen electrodes for the titration of soap solutions with 0.01 Normal hydrochloric acid. The titration curve exhibits a number of breaks, corresponding with (1) neutralization of sodium hydroxide arising from hydrolysis of soap, (2) exchange of sodium of neutral soap for hydrogen, and (3) decomposition of sodium bicarbonate and sodium carbonate. A. P. Vischniakov and N. A. Roditscheva. *J. Appl. Chem. Russ.*, **13,** 1517-22; through *Brit. Chem. Abs.*

—— • ——

Continuous Oil Refining

The oil-containing soap separated from the oil is mixed with oil-containing soap-water separated from the refined oil in the washing step. This mixture is separated into two parts in a centrifugal machine. An emulsion-breaking agent such as sodium chloride may be added. A high yield of oil is obtained because the wash water reduces the viscosity of the oil-containing soap. Aktiebolaget Separator. British Patent No. 526,852.

Selection of Soap Oils

The use of natural oils in soap making forces the manufacturer to utilize varying amounts of fatty acids that are not only of no value for the specific purpose, but also in many cases are detrimental to the final product. The chief fatty acids used in soap manufacture are oleic and palmitic. The use of naturally occurring oils as a source of these fatty acids adds large amounts of stearic acid and other acids which produce more insoluble soap.

To counteract the insolubility of sodium stearate, the soapmaker must incorporate large quantities of coconut oil. About the same amount of lauric acid is used as stearic acid, in actual practice. Work to date has shown that the value of these two fatty acids for soapmaking purposes is dependent on one another. If the stearic acid was removed from the soap kettle it would be possible to eliminate the lauric acid and still produce soap that would be quite satisfactory in the majority of cases.

Another example of the addition to the soap kettle of acids which do not belong there is the use of nearly 100,000,000 pounds of fish oil annually, with its content of C_{20} and C_{22} acids. When these acids are partially or completely hydrogenated, they are changed into acids whose sodium salts are quite insoluble and of no more value as soaps than the equivalent amount of sand. These examples show the importance of separation of fractions as a tool for using our fat and oil supplies at maximum efficiency. Separation can be obtained by several methods, some of which are the subject of present research. R. H. Potts. *Oil & Soap* **18,** 199-202 (1941).

—— • ——

Silicates as Cleaners

Of the alkaline salts, the silicates form the best wetting and emulsifying agents. They are also exceptionally good buffering agents. The orthosilicate proportion of 2:1 of Na_2O:SiO_2 give the best results in emulsifying oils and fats. The silicates are fair rinsers, varying with composition; at high temperatures, they are better rinsers than soda ash, but not so easily rinsed at room temperatures.

With hard water, silicates give rise to the formation of calcium and magnesium silicates. These are usually semi-colloidal and on standing, precipitate as a sludge which is non-adherent. Under some conditions, often in the presence of excess sodium carbonate, they precipitate to form a hard scale impregnated with silica. The more siliceous silicates form colloidal aggregates of silicate ions with associated silica molecules, having a negative charge, which leads to some adsorption of positive sodium ions on the surface. Such groups constitute the equivalent of ionic micelles postulated by McBain to account for the high conductivity of soap solutions. At any rate, the presence of colloidal material has an important influence on the cleaning properties of silicate solutions, in view of the internal energy thus contributed; this is the most important advantage possessed by the silicates over other alkalies. All of the silicates are rapid sterilizers. P. C. Liddiard. *Chemistry and Industry* **60,** 713-16 (1941).

—— • ——

Granular Soap

In this method a stream of hot gases is directed downward. A fluid mixture of kettle soap and granular soap is centrifugally sprayed into the upper end of the gas stream, thereby producing granular soap by spray drying. The spray-dried product is utilized as the granular soap ingredient of the mixture in the proper ratio so that the soap will yield by flash drying, a granular soap having a mass density not less than 0.3. The ingredients of such a mixture are limited to kettle soap and the granular soap produced by spray-drying the mixture. Arthur B. Jones. U. S. Patent No. 2,249,960.

—— • ——

Cleaner for Jewelry

A cleaning solution for jewelry is made from a mixture of methyl-cellulose, soap flakes, potassium cyanide and water. Martha Anders and Margo Berg. German Patent No. 700,384.

THE ACTION OF ROSIN SOAPS ON HUMAN SKIN

By Dr. Leroy D. Edwards*

AT the request of C. F. Speh, Chief, Naval Stores Research Division, United States Department of Agriculture, this laboratory undertook a study of the action of rosin soaps and soaps of rosin constituents on human skin, to determine whether or not such soaps were irritant to normal adult skin. The test method, consisted of the application to skin of soap solutions contained in a rubber diaphragm and held in place by a collar equipped with adjustable elastic bands. The solution was removed after it had been in contact with the skin for three hours, the area washed with warm tap water, dried, and examined at intervals for signs of irritation. In the first series of tests the solutions shown in the table below were employed (these solutions were prepared by the Naval Stores Research Division, and the comments on these solutions contained herein are those of the Naval Stores Research Division);

The soap solutions in bottles 1, 8, 13, 14, 15, 18, 19 and 23 were prepared as follows:

> Dissolve 6.8 gms. rosin or rosin acid in 25 to 40 ml. of 95 per cent ethyl alcohol, add 4 to 5 drops of phenolphthalein, titrate to phenolphthalein end point with aqueous NaOH, and dilute to one liter with 0.1 per cent tetrasodium pyrophosphate.

In the case of the abietic acid soap this procedure would give a normality of 0.0225 or about 0.73 per cent. Since the molecular weights of the rosin acids are not very different and the presence of resenes in rosin makes calculation of the normality of the soap solutions prepared with rosin difficult and misleading, all solutions were prepared using 6.8 gm. of rosin or rosin acid. The soap solution number 17 differed from number 14 only in that 0.02 per cent Na_2CO_3 was used in place of 0.1 per cent sodium tetrapyrophosphate. The rosin soap number 6 is the same as number 14 but was prepared as follows:

> Six and eight-tenths grams of rosin was added to 100 ml. of boiling water, containing just enough NaOH to completely neutralize the rosin (NaOH determined by previously titrating some of the rosin in alcohol). The solution was boiled for ten minutes, and then diluted to 1 liter. Neutralizing rosin in this manner is a compromise between complete neutralization and possible oxidation during boiling. Ten minutes boiling should cause no significant amount of oxidation, and almost completely neutralizes the rosin—the deficiency being due to the fact that a very small amount of the rosin (undoubtedly less than 1 per cent) did not go into solution.

Titration of rosin in water with NaOH solution to a phenolphthalein end-point leaves some rosin unneutralized. This is due to hydrolysis of the soap to such an extent that the solution is alkaline before neutralization is complete. Therefore, the easiest way to insure complete neutralization of rosin is to titrate it in an alcoholic solution to the phenolphthalein end point. When the titration is complete the alcoholic solution should be more than 50 per cent alcohol, otherwise increased hydrolysis may cause an alkaline reaction before the rosin is completely neutralized.

Tests with the above soap solutions were run on six males and four females. These individuals were selected since many of them had given positive responses to soaps made from members of the saturated fatty acid series and to soaps made from refined fixed oils. In the case of the rosin series as outlined above all tests were negative as far as irritation was concerned. At times the skin appeared white and sticky due to a deposition of the rosin soap, but there was no irritation.

ROSIN SOAPS SERIES I

Bottle No.	*Description*	*Buffer*	*ph of Solution*
14	Rosin from 100% slash pine gum	0.1% $Na_2P_2O_7 . 10\ H_2O$	10.2
18	Rosin from 100% long leaf pine gum	same	10.3
8	Oxidized rosin	same	10.2
23	Abietic acid 83	same	10.3
13	Dehydroabietic acid m.p. 170 61	same	10.1
15	Control 30 ml 95% alcohol	same	10.2
1	Dihydroabietic acid	same	....
19	Tetrahydrohydroxy abietic acid	same	....
17	Rosin from 100% slash pine gum	0.02% Na_2CO_3	10.3
6	Rosin from 100% slash pine gum	none	10.4

* School of Pharmacy, University of Florida.

Bottle No.	Soap made from	Comments
13	Long leaf pine rosin	To determine the effect of species.
134	Slash pine rosin	
106	Oxidized long leaf pine rosin	Oxidized by exposing rosin in powdered state to air at room temperature — to show effect of oxidized rosin soaps on skin.
67	Slash pine rosin	In 0.02% Na_2CO_3 — to demonstrate the effect, if any, of increasing the alkalinity slightly.
4	Palm oil	To show effect of rosin and fatty acid soap mixture.
15	Palm oil plus rosin 3-1 by weight	
113	Pyroabietic acid (principally dehydroabietic acid)	To show effect of structure of individual acids.
119	Dehydroabietic acid	
79	Abietic acid	
40	Dihydroabietic acid	
8	Tetrahydroabietic acid	

ROSIN SOAPS SERIES II

SINCE this laboratory had conducted some soap tests on patients who received daily alcoholic rubs with soaps known to be irritant and obtained negative results, a request was made of the Naval Stores Research Division for another series of rosin soaps solutions which did not contain alcohol. The soaps shown in series II were supplied:

These rosin soaps solutions free from alcohol were prepared as follows:

> Six and one-tenth gms. of rosin or rosin acid were dissolved in 95 per cent alcohol. Six to eight drops of phenolphthalein were added, and then the solution was titrated with a strong aqueous solution of NaOH until just alkaline. The alcohol was distilled off in vacuum at 70° C. When all the alcohol was removed the rosin soap was dissolved in 900 ml. of distilled water which was admitted to the flask while the system was still under vacuum. In this way oxidation is held at a minimum.

Skin tests made with these alcohol free rosin and rosin acid soap solutions on ten males gave in each case negative results as far as irritation was concerned. Using the results obtained from the tests of these two series of rosin soap solutions on adult human skin as a basis, it seems fair to conclude that rosin soaps and rosin acid soaps under the several conditions as outlined are relatively non-irritant to human skin.

[1] *Jour. Am. Pharm. Assoc.*, Sc. Ed., 29, 251 (1940).

◆

Washing Preparations

Excellent preparations for ordinary washing purposes, especially for household use, can be obtained by mixing together one or more salts of the reaction product of sulfuric acid with higher molecular saturated aliphatic alcohols containing more than 8 carbon atoms, with those of the reaction products of sulfuric acid with unsaturated higher molecular fatty alcohols. The preparations can be worked up in a soap mill into various compact forms such as cakes or tablets, also ribbons, flakes, needles and vermicelli. It is possible in this way to obtain hard pieces of high polish which are unaffected by lime and magnesium salts, and which also lather exceedingly well in very salty water such as sea water. The neutralized sulfuric reaction products of higher molecular saturated fatty alcohols are homogeneously worked up with those of an unsaturated nature, then pressed or shaped into pieces suitable for toilet use. If desired, small quantities not exceeding 20 per cent of ordinary soap may be incorporated with the mixture of salts. These products are distinguished from the usual coconut oil soaps for use in salt water, by their great lathering power and by being entirely without action on the skin. A particularly useful example of such a mixture is one containing 53 parts by weight of a technical mixture consisting of about 50 per cent of olein alcohol sulfonate and 50 per cent of the sulfonate of cetyl or octadecyl alcohol, 40 parts by weight of lauric alcohol sulfonate, and 7 parts by weight of curd soap. This is carefully mixed on a milling machine, with perfume added as desired. The mass can easily be pressed into hard shining pieces, but it can also be worked up into flakes, needles, etc. Products which consist only of sulfated saturated or unsaturated fatty alcohols cannot be shaped, but give pieces which are brittle and of poor appearance. Deutsche Hydrierwerke A.-G. British Patent Spec. 406,565; through *Perfumery & Essential Oil Record* **32**, 244 (1941).

◆

Purifying Sulfonated Oil

A crude sulfonation mass consisting of sulfonated animal vegetable or marine oil or fatty acid derivatives, is dispersed in at least an equal volume of a substantially anhydrous organic solvent. The sulfonated mass is neutralized and the precipitated inorganic salts removed. Solvent and residual moisture is then removed from the neutralized sulfonated material. National Oil Products Co. British Patent No. 526,960.

◆

Bleaching Oils

Oils, fats and waxes are heated to 50-100° C. and then agitated with the slow addition of sodium perpyrophosphate in sufficient amount to bleach the material. Agitation is continued and the temperature maintained until the bleaching is effected. Anna Noder, to Buffalo Electro-Chemical Co. U. S. Patent No. 2,250,203; through *Chem. Abs.*

WURSTER & SANGER, INC.

Contracting and Consulting Engineers

52nd STREET & S. KENWOOD AVENUE, CHICAGO, ILLINOIS

Specialists in the Soap, Glycerine, Fat and Oil Industries

Complete Plants and Engineering Services for:

Crude, Dynamite and C. P. Glycerine
Refining, Bleaching and Deodorizing Oils
Hydrogenation of Oils
Vegetable Shortening, Margarine
Salad Oil, Winter Oil
Evaporation in Single, Double and Multiple Effects
Fat Splitting: Eisenlohr Continuous Process
Twitchell and Autoclave Processes
Stearic Acid and Red Oil
Fatty Acid Distillation
Laundry and Toilet Soaps
Oil Extraction and Degreasing
Glue and Gelatine
Continuous Glue Evaporation

Development of Processes, Reports, Investigations

W & S GLYCERINE EVAPORATORS

The improved WURSTER & SANGER Soap Lye Evaporator constitutes a marked advance in calandria design. Positive circulation of liquor in a definite direction has proved to increase the rate of evaporation and promote the separation of large crystals.

The WURSTER & SANGER Sweet-Water Evaporator has fulfilled the long need of complete accessibility for cleaning of tubes. It is equipped with an external heating element which affords high liquid velocity and a high rate of heat transfer.

CONTINUOUS GLYCERINE REFINING

Our Continuous Glycerine Refining Plants represent the most modern and economical equipment for the production of Dynamite, High Gravity and C. P. grades from Crude. We have developed a plant which is an improvement over all former methods of distilling glycerine.

Our plants are producing C. P. glycerine in one distillation with yields of over 97% and low steam consumption. All glycerine is condensed in concentrated form eliminating the handling of sweet-waters. Continuous operation and automatic controls reduce the operating attention to a minimum.

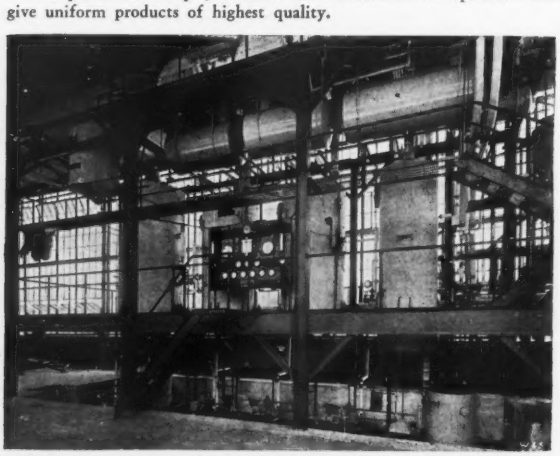
OIL REFINING AND DEODORIZING PLANTS

WURSTER & SANGER Oil Refining and Deodorizing Plants for the production of edible oils are suitable for cottonseed, corn, soya bean, peanut, cocoanut and other oils. Our equipment, processes and services cover completely all phases of this industry.

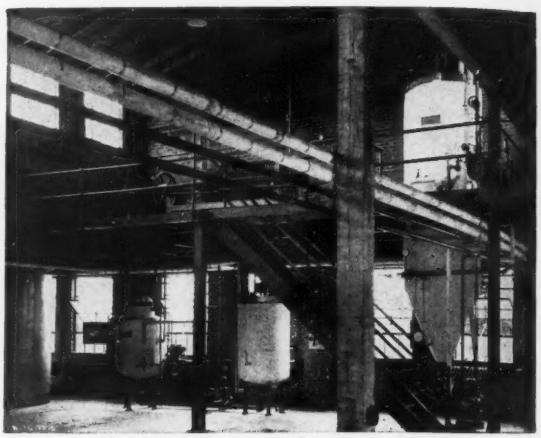
HYDROGENATION PLANTS

WURSTER & SANGER Oil Hardening Plants are built for partially or completely hardening vegetable oils, fish oils, lard and tallow, for edible and technical purposes.

Our plants are simple, efficient and economical in operation and give uniform products of highest quality.



Wurster & Sanger Continuous Glycerine Distillation Plant



Wurster & Sanger Hydrogenation Plant

W & S CATALYST REDUCER

The operation of the WURSTER & SANGER Wet Catalyst Reducer is completely automatic, resulting in a uniform catalyst of the greatest activity, longest life and less susceptible to poisons. The hazards encountered in dry reduction methods are eliminated. Operating costs are extremely low.

FATTY ACID DISTILLATION

WURSTER & SANGER Fatty Acid Distillation Plants are of improved design and construction throughout. Operation is under high vacuum and at low temperature, producing a superior quality of distilled fatty acids with high yields.

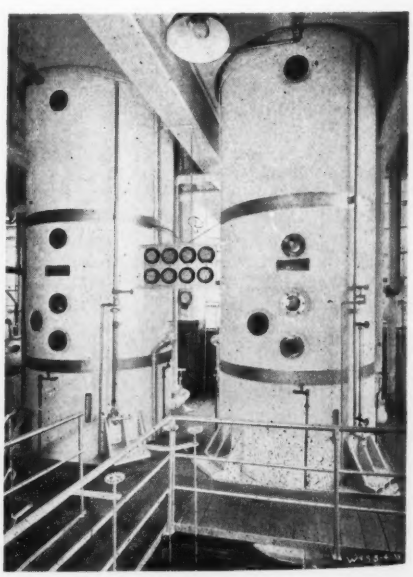
SOAP AND SOAP POWDER PLANTS

We specialize in the design and building of soap plants. Our Spray-Process Soap Powder Plant is producing soap powder at the lowest production cost.

ESTIMATES AND QUOTATIONS

We are glad to furnish information and quotations covering any equipment from the smallest part of an installation to complete plants for the manufacture of products from fats and oils.

Your inquiries will have our prompt consideration.



Wurster & Sanger Double Effect Soap Lye Glycerine Evaporator

PRODUCTS AND PROCESSES

Formaldehyde Soap

The potash soap obtained from castor oil, which is clear and miscible with water, is preferable to the saponification products of cottonseed, sunflower seed or peanut oils in the preparation of formaldehyde soap. Determination of formaldehyde in soaps with 0.1 Normal hydrochloric acid in the presence of sodium sulfite is preferred. Z. Weinstock. *Rev. Fac. Cienc. Quim.*, La Plata **15,** 107-23; through *Brit. Chem. Abs.*

Detergent Film

A flexible film of water-soluble material consists of a sheet of a soap-gelatin mixture, on each side of which is laminated successively a plurality of flexible films, with the outermost film of soap applied to a film containing an antiseptic. When the article is used with water, the soap will first go into solution to effect a cleansing action and the antiseptic is then released. Clement Ehret. U. S. Patent No. 2,251,328.

Cleaner for Wool Rugs

Wool rugs and carpets are washed with the supernatant liquid from a mixture formed by dissolving in water a stable chloride of lime, soda ash in excess of that necessary to react with all of the calcium present, and sodium lauryl sulfate. The treated rug must be rinsed with water. Mathieson Alkali Works. British Patent No. 526,647.

Detergent and Germicide

Detergent and germicidal compositions are prepared by intimately admixing solid chloride of lime of high purity, soda ash in an amount in excess of that necessary to react with all of the calcium present in the mixture, a synthetic detergent such as a fatty alcohol sulfate, and a quaternary ammonium salt containing a group having at least eight carbon atoms. Mathieson Alkali Works. British Patent No. 526,646.

Purifying Organic Sulfonates

An organic sulfonate such as a mineral oil sulfonate is purified by heating with a fluxing material such as a soap and a saponifying reagent, in the substantial absence of water, to a temperature not lower than the melting point of the reaction mixture. The treatment is carried out in an inert atmosphere while passing a stream of inert gas such as steam through the molten mass. Robert B. Colgate and Emil E. Dreger, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,250,092.

Resin Soap

A pulverized gasoline-insoluble pine wood resin is dispersed in water and saponified with alkali without the application of heat to give soap. Resin of this type is disclosed in U. S. Patent 2,102,122. Hercules Powder Co. British Patent No. 527,479.

Silicate Soaps

Soaps containing alkali silicates are obtained by saponifying neutral fats with sodium metasilicate in the cold. If the fats contain fatty acids saponification is carried out with warming. Clemens Bergell. German Patent No. 700,226.

Spent Soap Lye Treatment

A sludge from recovering nickel catalyst which has been used in the hydrogenation of fats has some advantages over alumina for treating spent soap lye. The sludge contains water 64.5 per cent, insoluble residue 14.57, fat 10.64, ferric iron 8.1 and nickel 2.19 per cent. It is first treated with 4 parts of concentrated sulfuric acid to 1 part of dry sludge, then thinned with water to a liquid consistency. The insoluble residue is removed, being inert. The amount of raw sludge taken for use is 2 per cent of the spent lye to be purified. After thorough mixing the lye is heated, then filtered and evaporated in vacuum. The spent lye must be slightly acidified before treatment. S. Bogoyavlenskii and T. Chernushkina. *Masloboino-Zhirovaya Prom.* **16,** No. 5-6, 60; through *Chem. Abs.*

Soap Additive

A mixture of 2.5-4 molecules of sodium carbonate and 1 molecule of silica is heated above the temperature of incipient fusion. The product may be mixed with soap, a metaphosphate, a pyrophosphate, oxidizing or reducing substances, a resinate or a sulfonate. B. Laporte Ltd. British Patent No. 525,514.

Removal of Scale

Beer scale, milk scale and similar calcareous deposits are effectively removed from pasteurizing and cooling machines and piping with a dilute solution of tartaric acid, tartrates or a mixture of the two, having a pH of 2-4. To the solution may be added phosphoric, lactic or citric acid, or salts of these acids. Such a cleaning solution does not attack metals. Verein fur chem. und metall. Production. German Patent No. 694,-237.

Perfume in Shaving Creams

Perfume compositions for use in shaving soaps and creams must above all be well fixed. Among fixing agents, resinoids and other resinous products are of paramount importance. The skin of the face being sensitive, it should be borne in mind that irritating effects have been observed in connection with such aromatic chemicals as hydroxycitronellal, eugenol, heliotropin, etc. Chemicals which may cause discoloration should also be avoided, since most shaving soap or cream is white; such compounds include indole, vanillin, isoeugenol, methyl anthranilate, and musk ambrette. *Drug & Cosmetic Ind.* **49,** 546 (1941).

A

SAMPLE SAVING

WITH THE

TRANSWRAP MACHINE

This Boraxo Sample package is produced by the Celluwrap Packing Company, Wilmington, Del.

PACIFIC COAST BORAX CO.

Saves 4/5 the cost

OF SAMPLE PACKAGES USING THE TRANSWRAP PACKAGES FORMED FROM PRINTED "CELLOPHANE"

CHANGE from old-style miniature can to Transwrap package for sampling saved four dollars of every five spent for sample packages! Furthermore, the Transwrap package

SAVES ON SHIPPING AND MAILING COSTS, TOO!

The Transwrap package is lighter and smaller; requires no expensive carton or packer. Not only does it save in original cost of the package, but the cost of its distribution is very substantially reduced.

All these savings taken into account

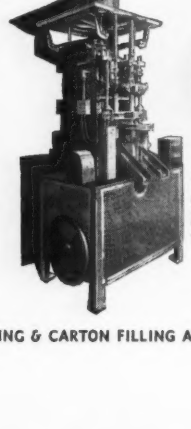
THE TRANSWRAP SAMPLE REACHES 5 POTENTIAL CUSTOMERS FOR *LESS* THAN THE FORMER COST OF REACHING ONE!

And, it does a better selling job, too . . . for, the printed wrap most effectively presents the Boraxo story in addition to the faithful reproduction of the regular package.

SIMILAR SAVINGS FOR YOU can be made!

For sample packages . . . for larger quantities and sizes . . . for coffee, candy, popcorn, nuts, crackers, powders, pills, tablets, granular materials and miscellaneous articles.
Ask about it; write—

STOKES & SMITH Co
PACKAGING MACHINERY — PAPER BOX MACHINERY
4915 SUMMERDALE AVE.
PHILADELPHIA, U. S. A.



Folder fully describing S & S TRANSWRAP sent on request.

S&S **TRANSWRAP**

FORMS—FILLS—SEALS—60 OR MORE PER MINUTE!

Uses "Cellophane," or other heat-sealing material, from the roll . . . plain or printed. Insures a perfectly tight package, yet the serrated or notched cut-off makes it very easy and quick to open.

ALSO . . FILLING & CARTON FILLING AND SEALING & TIGHT WRAPPING MACHINERY • SPEEDS TO SUIT YOUR NEEDS 15-30-60-120 PER MINUTE

NEW PATENTS

Conducted by

Lancaster, Allwine & Rommel

Registered Attorneys

PATENT AND TRADE-MARK CAUSES

402 Bowen Building, Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine and Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

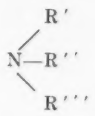
No. 2,257,960, Cleaning Aluminum Surfaces, patented October 7, 1941 by William M. Humphrey, Jackson Heights, and Robert E. Lee, Jamaica, N. Y. A new cleaning composition particularly adapted for removing aluminum oxide, etc. from aluminum surfaces, compounded from a material of the class consisting of phosphoric and phosphorous acids, a fluoride reactive with such material, and a colloidal clay, the composition, when applied to such surfaces, supplying available fluorine for cleaning such surfaces.

No. 2,258,390, Larvacide, patented Octover 7, 1941 by Walter D. Martin, Albany, Ga. A larvacidal composition comprising a rosin soap impregnated with kerosene; at least one of the group consisting of water gas tar, tar acid oil and light creosote oil; at least one of the group consisting of motor oil and bunker C gas oil, the selections from the groups being combined in a state of partial emulsification; and with castor oil.

No. 2,258,556, Moth Proofing Agent, patented October 7, 1941 by Erik Schirm, Dessau, Anhalt, Germany. A moth-proofing agent comprising a benzine soluble aromatic hydroxy compound substituted by at least one organic radical, all of such organic radicals being aliphatic in structure and at least one of which contains at least 4 carbon atoms, the aliphatic and hydroxy radicals being joined to the aromatic nucleus.

No. 2,258,619, Method of preserving soap, patented October 14, 1941 by Bernard L. Maxwell, Reading, Mass., assignor to Lever Brothers Co. The method of stabilizing a soap composition having as a constituent a material proportion of a potassium soap, which comprises incorporating in the soap composition a small amount of alphastannic acid.

No. 2,258,832, Insecticide Oil Spray, patented October 14, 1941 by Alfred W. Weitkamp, Hammond, Ind., assignor to Standard Oil Co., Chicago. The method of preventing the separation of insoluble deposits from tree spray oils containing hydroxy esters of high molecular weight organic acids and polyhydroxy alcohols of the class consisting of glycol and glycerol as emulsifiers and containing an oil soluble toxic of the class consisting of nicotine and oil soluble nicotine compounds, which method comprises adding a stabilizer to such oil sprays in amounts greater than 0.1 per cent and less than 1.0 per cent, the stabilizer being selected from the class of chemical compounds having the following composition:



in which R′ is a lower alkyl radical, R′′ is a lower alkanol radical and R′′′ is selected from the group consisting of hydrogen, lower alkyl radicals and lower alkanol radicals.

No. 2,258,833, Insecticidal Oil Spray, patented October 14, 1941 by Elmer W. Adams, Hammond, Ind., and Thomas E. Sharp, Chicago, assignors to Standard Oil Co., Chicago. The method of preventing the separation of insoluble deposits from tree spray oils containing an hydroxy ester of high molecular weight organic acids and polyhydroxy alcohols of the class consisting of glycol and glycerol and containing an oil soluble toxic of the class consisting of nicotine and oil soluble nicotine compounds, which method comprises adding a mahogany soap to such oil sprays in amounts greater than 0.1 per cent and less than 1.0 per cent.

No. 2,259,869, Insecticide and Repellent, patented October 21, 1941 by Clyde C. Allen, Wichita, Kans., assignor to Shell Development Co., San Francisco. An insecticidal and fumigating composition containing as an active constituent an alkenyl acyl sulfide.

Purifying Soap Stock

Possibly one of the best methods for purifying soap stock is one covered by a Lever patent in which the oil or fat is first treated with 4 per cent of Tonsil earth which has been acidified with sulfuric acid. The mixture is then heated to 95° C. for about two hours, during which time it is well stirred, then filtered and transferred to a high-vacuum chamber. Here it is heated to 245-85° C. by the passage of superheated steam at 7 pounds per square inch absolute pressure. After two hours, bleaching is completed and even the most obstinate impurities are removed.

The method is particularly useful in the case of oils containing free fatty acids, as these are carried off by the steam, and on a large scale may be profitably recovered. According to one report, it is possible to bleach and deodorize palm oil, bone grease, second-quality tallow, palm kernel oil and almost any type of oil, by this process. *Am. Perfumer* 43, No. 4, 53-4 (1941).

Soap Composition

A soap composition consists of kettle soap and sodium silicate in the ratio of silicate to soap of at least 4 to 10,—an organic water-soluble colloidal dispersing agent such as starch in a quantity sufficient to make the soap and sodium silicate compatible,—and a sudsing material selected from the group consisting of sodium pyrophosphate and sodium hexametaphosphate. The latter material is present in sufficient quantity to induce normal sudsing of the composition. John B. Curzon, to Harris Soap Co. Canadian Patent No. 400,-451.

Dry-cleaning Solvent

A solvent such as naphtha or Stoddard's solvent has incorporated with it 0.025-6 per cent of a polyglycerol partially esterified with a mixture of fatty acids containing mainly saturated fatty acids of 8-22 carbon atoms, which serve to give improved cleansing power. A. S. Richardson, to the Procter & Gamble Co. U. S. Patent No. 2,251,691.

NEW EQUIPMENT

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

853—Filtering Equipment

A new catalogue on "Hy-Speed" equipment for liquid processing, just issued by Alsop Engineering Corp., Milldale, Conn., contains detailed information on the new Alsop line of filter equipment and filter sheets. The new "Sealed Disc" type filters, which are said to eliminate the need for building a filter cake, the need of a special operator and the job of washing dirty filter cloths or bags, are described in detail. A sample filter sheet is attached to the 36-page folder. Agitators, bottle fillers, mixers, labeling equipment, pumps and tanks made by the company are also illustrated and described.

—— ♦ ——

854—Aerosol Wetting Agents

"Aerosol" wetting agents, products of American Cyanamid & Chemical Corp., New York, are discussed at length in a new 80-page booklet just issued by the company. The various types available are described, their solubility in various types of solutions illustrated and summarized, their surface and interfacial tension in water and electrolyte solutions shown by graphs, and other data on their physical and chemical properties included. Their commercial applications are also covered. "Aerosol OT" is di-octyl sodium sulfosuccinate; "Aerosol MA" is dihexyl sodium sulfosuccinate; "Aerosol AY" is di-amyl sodium sulfosuccinate; "Aerosol IB" is di-butyl sodium sulfosuccinate; "Aerosol OS" is isopropyl naphthalene sodium sulfonate.

855—Sealing Shipping Boxes

Hinde & Dauch Paper Co., Sandusky, Ohio, has just brought out a new booklet "How to Seal Corrugated Shipping Boxes," which points out principles of simplification which can be applied to sealing operations. It discusses the most efficient methods for sealing with adhesives, gummed tape, staples or stitches, and wires or straps. Methods recommended are said to prevent waste of materials and loss from damage in shipment, and to speed operations in shipping.

—— ♦ ——

856—Industrial Pumps

Practical information concerning pump adaptation for a wide range of duties under varying conditions is contained in the new 24-page catalog on industrial pumps, just published by Pomona Pump Co., Pomona, California. Diagrams of pump construction, drawings of various types of installations, and photographs and case histories of pumps in actual use are included in this brochure. High efficiency for the pumps is claimed for such operations as booster, transfer, condenser, circulating, agitator, vat, sump, vacuum lift, air conditioning, filter wash water and fire protection.

—— ♦ ——

Review Soap Ad Claims

A summary of soap advertising and claims made by soap companies in the sale of soap brands is a feature article in the October issue of *Consumers' Research Bulletin*, publication of Consumers' Research, Inc. Recent cases of conflict between the Federal Trade Commission and advertisers are reviewed, and examples of methods used to avoid trouble with the F.T.C. are cited. The substitution of suggestion for misrepresentation is one method being employed, it is said. To quote, in part: "For the bald misstatements of fact which they formerly used, admen, . . . have developed a new art of conveying false impressions by means of studied, shrewd groupings of statement, no one of which is false. Debutantes, Hollywood stars, and even nonentities are relied upon to make statements for which the admen themselves find it inexpedient to take responsibility." A list of toilet soap brands, broken into three groups, "recommended," "intermediate" and "not recommended," is appended to the article. Price per pound of dry soap of the various brands, and comments on their characteristics, as determined by CR tests, are given.

—— ♦ ——

New Soap Dispenser Specs.

A new Federal specification for soap dispensers, superseding Fed. Spec. FF-D-396a, issued December 27, 1938, has just been issued by the U. S. Government. The new specification, FF-D-396b, becomes effective April 15, 1942. Principal innovations in the specification are broadening of its scope to include dispensers employing a solid cake of soap, and dispensers with plastic composition container. Previous specifications had provided only for liquid soap and powder soap dispensers, with glass or metal containers. The requirements applying to materials from which the dispensers may be made have also been broadened in the new specification. For the cake soap dispenser, requirements call for "a regular shaped soap cake having dimensions of 3⅛ by 1⅞ by 1¼ inches." The soap cake must conform to Fed. Spec. P-S-621, except that the soap shall contain not more than 5 per cent volatile matter. (P-S-621 permits a maximum of 15 per cent volatile matter.) The allowable variation in size of the soap cake is minus ⅛-inch in each specified dimension. The solid soap dispenser specifications call for not less than 500 nor more than 1,500 positive actions for the dispensing of three ounces of soap. Only a few slight changes were made in the specifications applying to liquid and powder soap dispensers.

Transparent Soaps

In a review of conditions leading to the formation of transparent soaps, both cold-made and milled varieties are dealt with. In the latter, transparency and hardness are favored by strong cooling of the rolls; opacity by less cooling. The temperature during plodding must be kept between suitable limits. As an aid to transparency a special nozzle was constructed for the plodder by the authors, in which the soap is pressed through an annular orifice, both the internal and the external parts of the orifice being water-cooled. By this means, greater physical homogeneity is promoted and crystallization of part of the transparent soap is prevented. B. Tjutjunnikow, **S. Pleschkowa** and A. Tschernitschkina. *Seifensieder - Ztg.* **68,** 193-4, 205-6, 215-6, 227-8, 237 (1941).

Oil Stabilization

Vegetable oils and similar products are stabilized by heating them at a temperature above 120° C., frequently above 160° C., in the presence of (1) small quantities of a water-soluble carbohydrate such as sugar, or a compound containing phosphorus such as phosphoric acid, and (2) another compound such as hydroquinone, pyrogallol, guaiacol, thymol, aromatic amines or aldehydes. Addition of substances such as tartaric acid, citric acid, casein, and aspargine is beneficial. Musher Foundation, Inc. French Patent No. 848,523; through *Chem. Abs.*

Invert Soaps as Bactericides

Invert soaps in the form of tetrazolium salts are not as potent bactericides as benzotriazodium salts. It is probable that there is a casual relationship between the high disinfectant power of invert soaps and their ability to precipitate proteins and cleave symplexes. There is no way of telling whether or not the invert soaps can penetrate into living cells, so that it is not known whether such processes occur in the interior of the bacterial cells or merely on their surface membranes. Richard Kuhn and Dietrich Jerchel. Ber. **74B,** 941-8; 949-52 (1941); through *Chem. Abs.*

Invert soaps in the form of azinium salts foam strongly in aqueous solution. The bactericidal action towards *Streptobact. plantarum* increases with the length of the alkyl chain in the ratio 1:2 for dodecyl: cetyl, as in the case of tertiary ammonium salts. Toward *Staphylococcus aureus* the maximum effect is given by C_{12}, the C_8 and C_{16} salts being only 8 per cent as effective. Methods are outlined for the production of a number of these salts. Otto Westphal. Ber. **74B,** 1365-72 (1941); through *Chem. Abs.*

Stabilization of White Soaps

(*from Page* 33)

available to the soap industry for use in white milled soap. The use of carvacrol, thymol, and ortho-amyl phenol is limited due to odor interference when used in delicately scented soaps. Less objectionable in this regard are the dialkylated phenols and para-cyclo hexyl phenol. Considering the cost, at levels which were current prior to present upset market conditions, and the wide range of application, diamyl phenol was found to give remarkable value when compared with other phenols.

INCREASING in application and importance are amino compounds and derivatives; however, here too, as in the case of the phenolic bodies previously considered, a distinction in degree of effectiveness exists which is perhaps more divergent than anticipated and which is better measured by practical utility rather than other considerations. It may therefore be well to review the nitrogen-containing compounds which, due to their lack of efficiency or their undesirability, cannot be recommended for the stabilization of white milled soap. These include, formamide, urethane, alkyl and aryl substituted ureas, alkyl and aryl guanidines or condensation products, dicyandiamide, hexamethylene tetramine (8, 16, 28, 39), morpholine, melamine, succinimide, furfuramide, sulfonanilides, hexaphosphate dinitrides, formanilides, naphthylamines, phenylene-diamines and derivatives (21, 38, 51), benzylamines (19), aromatic amines and amino phenols (43), aromatic amino sulfonic or carboxylic acids (22, 28, 52), hydrazobenzenes (19), p-toluene chloramide (22, 53), biguanides of phenyl benzenes and condensed benzenoid hydrocarbons (30), hydroxylamine hydrochloride (8) and oximes. The lack of recommendation for some of the above compounds must not be construed as a measure of inefficiency, but rather as a precaution in view of certain undesirable secondary reactions which in some cases lead to serious discolorations.

Of doubtful value in soaps are the hydrogenated glyoxalines (54), dithiocarbamates, thiuram sulfides, alkyl thioureas (55), and piperazine derivatives (56). More practical for use in white milled soaps are aryl thioureas such as diphenyl thiourea and substituted phenyl thioureas (55), diphenylamine (19, 57), and substituted di-phenylamines (58), acylanilides, condensates of aromatic amines such as aniline with aldehydes as formaldehyde and acetaldehyde (22, 51, 59), as well as condensates of ketone and aromatic amines, and aryl or substituted aryl diguanides such as the recently marketed ortho-tolyl diguanide (30, 60). The corresponding aniline derivatives and substituted compounds are unusually effective in white milled soaps in concentrations of 0.1 per cent. Care, however, must be exercised in the judicious use of nitrogen containing stabilizers. Sunlight, notably with diphenyamine and aniline condensates, tends towards discolorations. Here, too, the perfume enters into consideration since high concentrations of aldehydes in the perfume oils often discolor soaps stabilized with amine-type compounds.

Unfortunately, the use of a greater number of these nitrogen compounds is limited by patents still in force, or, as in the case of the thiazoles, by too high cost for general use in soaps. Unrestricted are the acyl anilides, such as acetanilide and homologues, and the ketone-aromatic amine condensates which afford a

source of highly efficient antioxidants at a minimum cost.

Of the natural products, the use of gum guaiac (21, 61) as an antioxidant has been patented for edible fats and soaps, although the latter extension is somewhat unwarranted since its use in soap is attended by discoloration.

Often, remarkable soap stabilizations are effected through the joint use of two or more chemically unrelated bodies (28), each producing a specific effect, the sum total of which exceeds the individual capacity of the stabilizers used. Similar behavior in neutral oils has been recently described by Olcott (62) as a synergistic action. Its application to the soap industry has been recognized in practice for some time.

The soap industry has recognized the shortcomings of even their best antioxidants. Consequently, mixtures of chemicals have often been employed to extend their scope of application and to offset the multiple causes inducing rancidity and discoloration.

Bibliography

1. E. T. Webb, Soap and Glycerine Mfg. 1927, p. 13, 101 O. & C. T. J., 82, (9), 779, (1932). A. G. Kemp, O. & C. T. J., 86, (7), 27, (1934).
2. Tschirch & Baben, Apotheker Ztg., 22, 1924). J. Davidson—Weber, Seif. Ztg., 54, (1), (1927). G. E. Holmes, G. R. Greenbank & Dreysher, Ind. Eng. Chem., 19, 156-8, (1928). J. Davidschn, Deutsche Parf. Ztg., 18, 176, 236, 317 (1932). H. Fiedler, Fette u. Seifen., 419-422 (1938).
3. F. Winter, Handbuch d. gesamten Parfumerie u. Kosmetik, Vienna, (1932). J. Davidsohn and A. Davidsohn, S. P. C., 10, 40-2, (1937). Soap 13 (4), 62, (1937).
4. U. S. P. 2,040,430 (1928) See also Sch.'s Ber. Gr. II A, 121, (1937).
5. U. S. P. 2,073,923 (1937).
6. T. P. Hilditch et al, J. S. C. I., 51, 411-4 (1932). T. P. Hilditch and S. Paul, J. S. C. I., 58, 21-4, (1939).
7. Austr. P. 143,654 (1935) to H. Krause O. & S. 13, 107, (1936). Also U. S. P. 1,575,529 (1926) to H. Ballman of Germany.
8. J. M. Vallance, Soap, 15, (3), 21 ff, (1939).
9. R. Neu. Chem. Ztg., 60, 207, (1936). S. P. C., 9, (11), (1936).
10. Allg. Oel-u. Fette-Ztg., 33,167, (1936). Soap 12, (6) (1936) Sch. Ber. Gr. 11A, 120, (1937).
11. G. A. Wiesehahn, Food Ind. 7. 222-3, 275-6. (1935). O. & S. 12, 274, (1935).
12. P. I. Smith, Soap, 13 (4) 21, (1937).
13. U. S. P. 2,202,103 (1940).
14. H. P. Martin, S. T. & P. R. 7. (6), 8-9, (1934) Soap 10, (8). 63, (1934).
15. P. I. Smith, Seif. Ztg. 65. 568, 588-9, (1939). O. & S. 15, 273, (1938).
16. P. & E. O. R. 23, (8), 1932 O. & S. 9, 279, (1932).
17. W. Fischer. S. P. C., 9, 522-4, (1936) Soap 12, (11), 65, (1936).
18. A. Foulon. Allg. Oel-u. Fette.-Ztg. 36, 12-14 (1939). C. A., 33, 3194 (1939).
19. Sch.'s Ber. Gr. II B, 12, (1933).
20. Swed. P. 87,675, (1936) Soap 13, (4) 1937 O. & S. 14, 134, (1937).
21. R. G. Harry, Mfg. Perfr. 4, 82-5, 1939.
22. Ekschnam, Richstoff - Ind. U. Kosmetik, 12, 113-16, 1937. Soap, 13, (9) (1937).
23. D.R.P. 619, 928 (1934), O. & S. 13, 132 (1936).
24. C. H. Lea, Dept. Sc. Ind. Res. Rept., Food Invest. Board (1934), 38-43, (1935) O. & S. 13, 77, (1936).
25. J. M. Vallance, Soap, 12 (6), 31 ff. (1936).
26. H. S. Olcott, J.A.C.S., 56, 2492-3 (1934). O. & S., 12, 75, (1935).
27. M. R. Coe and J. A. LeClerc, O. & S. 12, 231-3 (1935).
28. P. I. Smith, Am. P. & E. O. R., 29, (1), 50, (1934). O. & S., 11, 127, (1934).
29. G. R. Greenbank and G. E. Holmes, Ind. & Eng. Chem. 26, 17, 243-5 (1934). O. & S. 11, 36, (1934).
30. Brit. Patent 521,863 (1940). P. & E. O. R. 238-9, 1940.
31. Welter, Zeit. d. Deutschen Oel-u-Fette-Ind. (18), 685, 1925: S. G. & P. 35, (1), 5, (1933); O. & C. T. J., 76, (10), 1030, (1929).
32. P. & E. O. R., 22, 394, (1931): Sch.'s Ber. Gr. 11A, 1B, (1932).
33. C. Bergell, Zeit. Oel-u-Fette Ind., 25, 233-4 (1932) S. G. & P. 34, (10).
34. O. & C. T. J., 82, (9) 779, 1932.
35. Seif. Ztg., 63, 921, (1936). Sch.'s Ber. Gr. 11A, 120, (1937).
36. P. I. Smith, S. P. C. Guide 26, (1938).
37. U. S. P. 2,029,506 (1936) to Procter & Gamble O. & S. 13, 132 (1936): Sch. Ber. 11A, 140, (1938).
38. E. J. Better. Seif. Ztg. 60, 200-2, 219-21, 235-7 (1933) O. & S., 10, 179, (1933).
39. Deutsche Parf. Ztg., 17, 470, (1931); Sch. Ber. Gr. 11A, 5, (1932).
40. C. C. Price, Canadian Chem. & Met., 19, 134-5, (1935). Soap 11, (7), 63 (1935); S. G. & P. 37, (7), 5, (1935).
41. Br. Pat. 440. 910: Soap 12, (8), 73, (1936). Sch. Ber. Gr. 11A 121, (1937).
42. D. R. P. 537,129 (1930) to R. T. Vanderbilt. U. S. P. 1,820,744 (1931) to R. T. Vanderbilt.
43. C. C. Moore, Dyer Textile Printer, Bleacher, Finisher, 72, 651 (1935). Chem. Zeit. I, 2105 (1935); Sch. Ber. Gr. 11A 90 (1936).
44. Can. Pat. 337,546 (1933): O. & S., 11, 126, (1934).
45. D. R. P. 595,968 (1934): O. & S. 11, 202 (1934).
46. Aust. P. 28,878 (1930): Sch. Ber. Gr. 11A 72, (1935).
47. U. S. P. 1,820,774 (1931). Seif. Ztg. 59, 524, (1932). Sch. Ber. Gr. 11A, 26 (1933): S. T. & P. R. 4,364 (1932).
48. Br. P. 355,056 (1931): P. & E. O. R., 22,360, (1931). Sch. Ber. Gr. 11A 52, (1932).
49. U. S. P. 1,993,771 (1935); O. & S., 13, 296, (1936).
50. U. S. P. 1,913,367 (1933); O. & S., 11, 17, (1934).
51. Chem. Age 38, 263-5 (1938).
52. U. S. P. 1,869,469 (932).
53. Fr. P. 760,789.
54. U. S. P. 1,805,953, (1931) and 1,805,954 Sch. Ber. Gr. 11A 26, (1933), S. T. & P. R. 4, 304, (1932).
55. U. S. P. 2,154,341 (1939). Soap 15, (9), 60- (1939).
56. U. S. P. 1,822,108 (1931).
57. U. S. P. 1,542,438 (1925).
58. Br. P. 410,274 (1935). S. G. & P. 37 (6) 14, (1935). O. & S. 12, 246 (1935).
59. U. S. P. 1,672,657 (1928).
60. P. & E. O. R. 29, 452 (1938).
61. Br. P. 399,639 (1933). Fr. P. 741,417. O. & S. 11, 126, (1934).
62. H. S. Olcott O. & S. 18, 79 (1941).

Glycerine

(*from Page* 37)

ditions. It should be kept in mind, however, that temperatures over 90°F. on the return water are considered high and will noticeably affect vacuum conditions.

WURSTER and SANGER evaporators are very adaptable for small plant operation, since the effects are built so that each may be run independently of the other or in combination as a double effect. For example, two units may be run four days of the week as a double effect with storage of the semi-crude. On the fifth day, both effects may be blanked off from one another and used independently for concentration. On still smaller scale production

where the saving of steam by use of the double effect cannot be justified, a single effect can be used in the manner described above to good advantage, producing crude for four days and concentrating it on the fifth.

Horizontal tube evaporators of the Swenson type are very efficient on high glycerine lyes and the accessibility of their tubes is a decided advantage. The lye may be evaporated, if desired, on the slightly acid side. The salt box is considerably larger than that on other types, holding anywhere from 3,000 to 3,500 pounds of salt which is not emptied intermittently, but only at the end of the run. The boxes used for semi-crude evaporation are most conveniently cone-bottomed, in which case the whole charge is dropped to the wash boxes and the semi-crude drawn through the salt to storage. These boxes may be merely wooden bins with canvas bottoms backed by a coarse screen. Concentration of the semi-crude follows similar lines, except that viscosity considerations make it inconvenient to draw the crude through the salt and it is therefore run off from a constant level side outlet and the salt handled separately. Approximate temperatures of finishing at 28" of vacuum are 150°F. for semi-crude and 190°F. for crude with adjustment of approximately 2°F. for each 0.1 increase or decrease in the vacuum.

The crude glycerine as dropped still contains considerable salt and it is customary to pass it through a series of settling tanks before admitting it to storage. Clear crudes free from suspended salt are very desirable, since they distil much smoother and faster with less loss. If possible, the crude should be permitted to stand two to three weeks before being finally transferred to storage. Settling tanks will require frequent boiling to dissolve the salt. This may be done on open or closed coils. If open coils are used however, it is advisable to have them so arranged that they may be lifted from the tank after each boiling so as to prevent a leaking valve from spoiling a charge. Care should be exercised to keep such wash waters to a minimum as they can become astonishingly large at times and substantially cut production.

Good crudes generally analyze 80 per cent to 82 per cent glycerine, 8 per cent to 10 per cent salt and 1 per cent to 1½ per cent organic residue. High organic residue is usually caused by faulty treatment, although high rosin consumption in the fat charge will also give abnormal figures. Reducing compounds should be very low, 0.05 per cent or less as Na_2SO_3, and their presence can usually be attributed to lack of attention to cleaning and disinfecting the lye tanks, etc.

(To Be Concluded)

New Angles on Powdered Soaps

(from Page 29)

passes upward through them. As the air passes through these cloth screens the finest of dust is retained, whereas the air goes on through. The screens may be readily cleaned after the mill has been shut down. There is furthermore a vibrating arrangement which permits the vibrating of the screens through which the dust clinging to the inside of the cloth may be loosened and dropped into the hoppers below.

In grinding powdered soap, the humidity and temperature due to change in seasons affect not only the grinding itself but the dust-collecting system, as well. Summer heat and excess humidity reduce the output. Dry winter air is ideal for proper grinding. Air-conditioning is advisable if large production is necessary during the humid, hot summer days. The grinding operation should never be carried out above a temperature of 125°F. because above this temperature, the soap is apt to soften, becomes less brittle and cannot be ground as readily.

IT is very important that after the powdered soap has been produced that it be properly packaged. Before putting powdered soap into containers and after grinding, it should be permitted to stand so as to cool down to room temperature. During this cooling-off period, the relative humidity should not be over 50 or the soap is apt to pick up moisture from the surrounding air and either cake or turn rancid more quickly. Rancidity is very apt to manifest itself by the soap becoming yellow, especially toward the center of the package where it might heat up.

In the past, it was customary to package this soap in wooden barrels weighing around 180 lbs. Fiber containers of smaller capacity have replaced these to a great extent and more recently corrugated shipping cases, paper lined, holding 50 to 100 lbs. of powder, have become popular packages. It is not desirable to have too air-tight a package for the powder as access of outside air reduces any heating effect. Inasmuch as the product sifts easily, dust-tight paper liners should be used.

There are increasing uses for these pure pulverized soaps in many fields of industry. Manufacturers who produce the type of product which is desired for special purposes and give careful, detailed attention to uniformity, special properties required, and the proper care in making and subsequent packaging, are most apt to get preference in this field. It is probably for this reason that smaller soap manufacturers and the specialty soap manufacturers have produced more powdered soap than those who make soap on a large quantity basis.

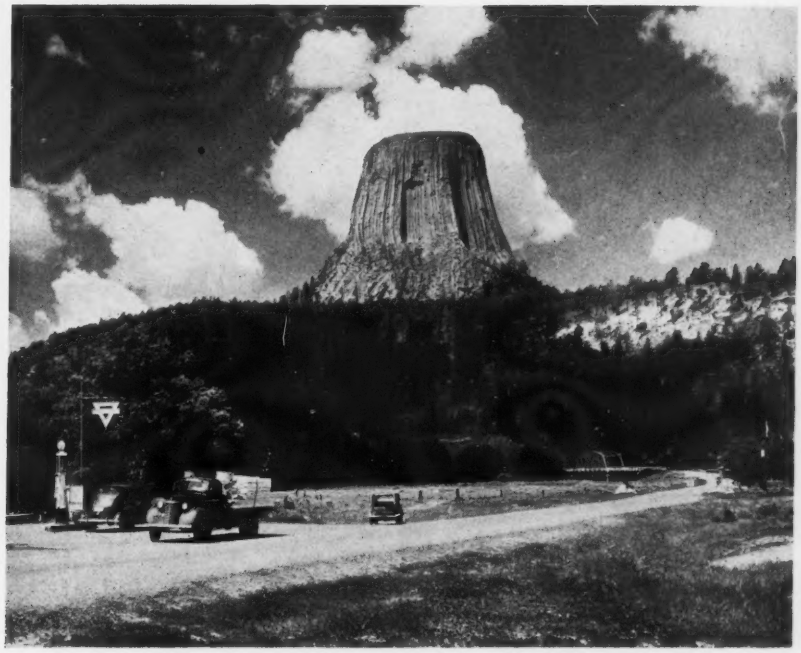
Powdered soaps as they appear on the market today are indeed specialties, and represent the purest form of commercial soaps. They must be considered as specialties from the selection of the base fat or oil right through to the time they are packaged. To ignore the unusual care needed in preparation of the soap base and to produce a powdered soap from ordinary dried toilet chip, as has been done on some occasions, is not to produce a product suitable or desirable for the various cosmetic and drug uses to which these products are placed.

SANITARY PRODUCTS SECTION

Insecticides • Disinfectants • Moth Products
Floor Products • Polishes • Chemical Specialties

OUTSTANDING!

The "Devil's Tower" in the Black Hills, Wyoming, an elevation curiously carved by erosion . . . a "laccolith."



PRENTISS CLARIFIED PYRETHRUM EXTRACT #20

"it's a natural"

For years Pyrethrum has been the outstanding insecticide base for household sprays. Now, with the cost of Pyrethrum greatly reduced, there is no reason why you should not use this time-tested concentrate in your spray. We can offer Prentiss Clarified Pyrethrum Concentrate No. 20, guaranteed to contain 2.0 grams Pyrethrins per 100 c.c., in 55 gallon drums, at the lowest price in years. Why not call or write us?

ANOTHER NATURAL!

Don't forget the convention of the National Association of Insecticide and Disinfectant Manufacturers on December 1 and 2, at the Hotel Roosevelt, New York City.

R. J. PRENTISS & CO., INC. — THE WORLD IN BOTANICALS

R. J. PRENTISS & CO.

80 JOHN STREET, NEW YORK CITY

IS TO POWCO

PYRIN The insecticide concentrate combining the best features of pyrethrum and DuPont's isobutyl undecylenamide.

POWCO PYRETHRUM POWDERS— Finer milling to give you more particles per pound—greater spread with higher kill.

BASIC PYRETHRUM EXTRACTS — Long recognized as outstanding because they are made by selective, cold extraction.

STIMTOX— Pest Control Operators and compounders of roach powders facing a shortage of sodium fluoride should investigate Stimtox "A", the *low-cost, fortified* pyrethrum powder. To extend present stocks we suggest that you replace two-thirds of the sodium fluoride in your formula with Stimtox "A".

ROTENONE PRODUCTS—Derris, Cube and Timbo powders of the same finer grinding; and Crystals, Resins, Extracts—products to meet your specifications as you need them.

PYRISCENTS— The first insecticide perfume oils specifically compounded and thoroughly tested for chemical compatibility with the active principles of Pyrethrum and Pyrin. PYRISCENTS (available in any odor desired) are nonpoisonous; *completely* oil soluble; will not react chemically to reduce killing power; and maintain their full odor value long after other perfumes have gone "sour".

HYDROSCENTS— Concentrated perfume bases that are readily miscible with water and have a lasting aromatic efficiency; specifically developoped for use in liquid soaps, theater sprays and other preparations requiring complete water miscibility.

POWCO BRAND
REG. U.S. PAT. OFF.

JOHN POWELL & CO., INC.

114 East 32nd Street, New York City.

"KILLING POWER—That's the thing!"

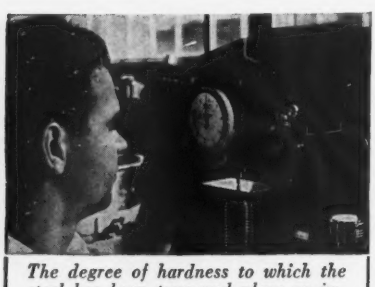
INSIDE NEWS

DECEMBER PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1941

National Can Corp. Research Department Tin Plate Inspection!

In line with the constant effort to produce a better can, tin plate, the main raw material, is the subject of constant testing and study. The combination of tin plated steel is of course suggested by the name tin plate; steel for strength and tin for protection. However, though the only part presented to visual examination is the bright, lustrous tin coating, the physical and chemical properties of the cold reduced steel base are of great importance both from a fabrication and usage standpoint. While the mills producing tin plate maintain large staffs of technicians for the sole purpose of producing the best possible product, it has also been found advantageous for the can manufacturer to carry on separate investigations to cover their own specialized conditions of use.

The gauge, or thickness of the plate is of great importance, and is therefore under constant check. In the can laboratory and shop, the instrument used is the hand micrometer pictured.

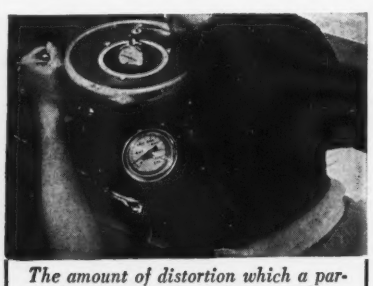


The degree of hardness to which the steel has been tempered plays an important part in the fabrication and performance of the can. The above machine is used to test this quality.

This is a result of the fact that steel is a most versatile material, and its physical characteristics can be changed in many ways to meet the varied demands of can making.

For instance, the most desirable qualities for sanitary can ends are not the most satisfactory for either can bodies or deep drawing general line stock. Therefore, for each individual use a different combination of qualities is sought.

The photographs below, show a few of the various testing methods used to analyze these characteristics. (34) RESEARCH IS ORGANIZED THINKING.



The amount of distortion which a particular sample of steel can undergo before fracture is of major importance in deep drawing operations. The operator is using one of the specialized machines which examine this characteristic.

Aluminum from Clay

A newly discovered process for the economical manufacture of aluminum from clay instead of bauxite has been announced. This important new discovery was revealed in a paper read before the 34th annual meeting of American Institute of Chemical Engineers. It is believed that the process may hold the key to the United States independence of foreign sources of bauxite. There is said to be only a limited supply of bauxite in this country at the new defense rate of consumption.

The process consists of digesting selected high-silica clays with hydrochloric acid and decomposing the resultant product to get hydrochloric acid and aluminum oxide or alumina. The aluminum metal is then produced electrolytically in the conventional manner. (35)

Cod Liver Oil at Lofoten

An interesting sidelight on the British occupation of the Lofoten Island off Norway is that this primary center of cod fishing was just beginning the year's production of cod liver oil. Destruction of these plants prevented the cod liver oil from being used in the manufacture of glycerin, used in the manufacture of explosives. (36)

Drying Oil Properties Given to Isano Oil

The use of Isano oil in paints and other protective coatings is suggested by a new British patent. According to the technical literature, Isano oil is a rather viscous, pale yellow oil, obtained from the kernel of *Ongokea Klaineana*, a tree found wild in tropical Africa. The literature also states that the oil as extracted from the kernel shows no drying properties, even after the addition of large amounts of drier. When heat treated, it is said, a pronounced exothermic reaction takes place, making the temperature difficult to control, and generally producing either a gelatinous product or considerable decomposition.

The new patent, however, claims a method of controlling the highly exothermic action, and the conversion of the oil into a suitable media for paints and impregnating compositions. It is declared that the oil may be heated to about 280°C. without danger of its becoming uncontrollable if it is first mixed with one or more of the ingredients of paints and varnishes, such as another oil, resin, wax or high-boiling solvent or diluent.

Upon heating Isano oil with linseed oil, it is pointed out in example, a material superior in drying properties to linseed stand oil is produced. It is also claimed that the mixture of Isano oil with semi-drying oils, and even certain non-drying oils can be made

BY
NATIONAL CAN

DECEMBER PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1941

to produce film-forming compositions; and that resins, waxes, and hydrocarbons also are improved by mixture with the oil and heat treatment.

Another means of using the oil described in the patent, is by applying a mixture of the raw oils and then baking the film. In this manner sheet metal may be coated with a mixture of Isano oil and linseed oil and then heat treated in a muffle furnace to produce a coating said to be very hard, and noteworthy in its resistance to acids, and alkalies.

The oil may also be treated, it is said, by heating it in combination with a high boiling solvent, and subsequently distilling off the solvent at reduced pressure. The separation of Isano oil into several fractions by selective solvent methods is also possible, it is claimed. The fractions may then be treated to yield materials exhibiting particular properties. (37)

U.S. to Increase Foodstuffs Production

A three-year plan for increasing foodstuffs production in unoccupied China for military and civilian requirements has been announced, according to the Department of Commerce. The goal for 1941 has been set at 1,743,500 tons in excess of last year.

The Ministry of Agriculture is encouraging increased food production through the grant of loans to various provinces and by providing the services of technical staffs. A special effort is being made to popularize new seeds and farming methods. (38)

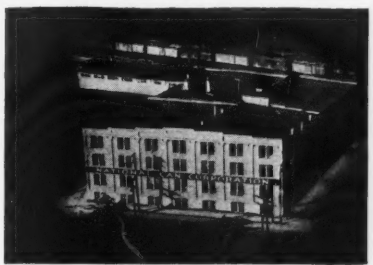
Improvements in Fruit Juice Process

A western university laboratory has announced improvements in the process for canning apple juice which retains practically all the fresh flavor and aroma. The first step in the process is the removal of all air from the juice. It is then pasteurized and canned in enameled lined cans, for which a special enamel is used. Several apple juice canneries are making use of the process, or modifications of it, this season.

A new richly flavored prune concentrate has also been perfected by this laboratory. In the past dried prunes have been extracted with water and the water extract then concentrated by boiling to a syrup. The new process consists of extracting the prunes in successive lots with hot water. As the extract progresses from one batch to the next it becomes a heavy syrup with the prune flavor and aroma intact. (39)

Cuban Peppers

Plans are being made in Cuba for canning a tentative minimum of 50,000 cases of peppers during the coming season. This venture should not immediately affect the export of fresh peppers, regardless of what results it may have in later years. (40)



Hamilton, Ohio plant of The National Can Corporation

Technical Topics

BENZYL BENZOATE pharmaceutical preparations are being advertised in England for use in the treatment of scabies. Abnormal living conditions resulting from the war are declared to have increased the incidence of scabies. (41)

NITROGEN TETROXIDE is being produced in experimental quantities in Britain. It is suggested as a vapor phase nitrating agent, particularly for the production of nitrates and nitro compounds in the fine chemical and pharmaceutical fields. The tetroxide has a boiling point of 21.3°C., and is offered in a purity of 95 percent, minimum. (42)

COPPER SULPHATE and sodium carbonate mixtures are being suggested in Britain for the effective retproofing of sandbags. It is declared that application of the mixture by a simple process makes them last eight times as long as when not treated. (43)

SOAP CONTAINERS were recently standardized as to size in the British Isles. Under the new set-up a seven-pound tin, a 28-pound pail for soft soap, and a 5-gallon minimum drum for liquid toilet soap were made standard. (44)

100% AMERICAN PIPES will soon be dipping into tobacco tins. Replacing roots no longer available from France and Italy, pipe manufacturers are using laurel roots which weigh from a few pounds to 800 pounds, from the mountains of western North Carolina. (45)

PETROLEUM RESIDUES suitable for the manufacture of refined petrolatum and dark wax materials are now being offered by a prominent American producer. The newly available material is declared to have a melting point between 110 and 140 degrees Fahrenheit. (46)

SILICOSUPERPHOSPHATE is to be produced in New Zealand for use in fertilizer compositions. The new fertilizer is claimed to have a lower moisture content than ordinary superphosphate. It will also contain serpentine, a silicate mineral found in commercial quantities in New Zealand. (47)

A LIQUID FUEL is to be manufactured from saw mill waste in a new plant being erected in Switzerland. The fuel is to be marketed under the name of "Alketone" and will consist of a mixture of crude wood alcohol and acetone. (48)

AGARS suitable for use in bacteriological procedures and in pharmaceutical operations are obtainable from various species of seaweed growing in the waters around the British Isles according to preliminary investigations. Further observations are being made to ascertain the particular parts of the coast on which supplies of suitable seaweeds grow, and modern methods for the production of Agar in quantity. (49)

PENICILLIN, the bactericidal agent occurring in species of *I enicillium* molds is so effective against certain types of pathogenic bacteria that it will prevent their growth when present in the concentration of only one part in a million, it is declared in recent British medical literature. It is also pointed out that the toxicity of penicillin is low, and that its efficiency is not reduced by the presence of pus, serum, or decomposition products of body proteins. (50)

DIPHENYL impregnated wrappers have been found valuable for the prevention of decay in oranges in transit, according to investigations carried on by the Hebrew Institute, Jerusalem. The report covers the preliminary use of such wrappers during the last five years. It is also stated that physiological tests have shown that diphenyl is completely harmless in quantities several times those to which workers are exposed in the manufacture or use of impregnated papers. (51)

For further information on any of these articles write to National Can Corp., 110 E. 42nd Street, New York City.

FOUR MAJOR D & O SUCCESSES

PYRETHRUM EXTRACT #20 ODORLESS

Good Pyrethrum concentrate has been available for a number of years but D & O Pyrethrum Extract No. 20 Odorless has set a new and higher standard of quality which others may perhaps eventually equal but will not excel. It is definitely superior in stability and freedom from odor, and at least equal to the best in other respects.

ROTOPYRESSENOL

Combining Pyrethrum and Dihydrorotenone in correct proportions, Rotopyressenol is the perfect concentrate for high-powered household insecticides. Safe, pleasant, and non-irritating, it combines exceptionally rapid knockdown with high killing power and is effective against roaches and bedbugs as well as flies.

PYRESSENOL #20 ODORLESS

Especially recommended for the semi-concentrates used in steam and electric vaporizers because of its effectiveness against roaches, it is economical and safe at relatively high concentrations.

PROTESSENOL C. S. CONCENTRATE

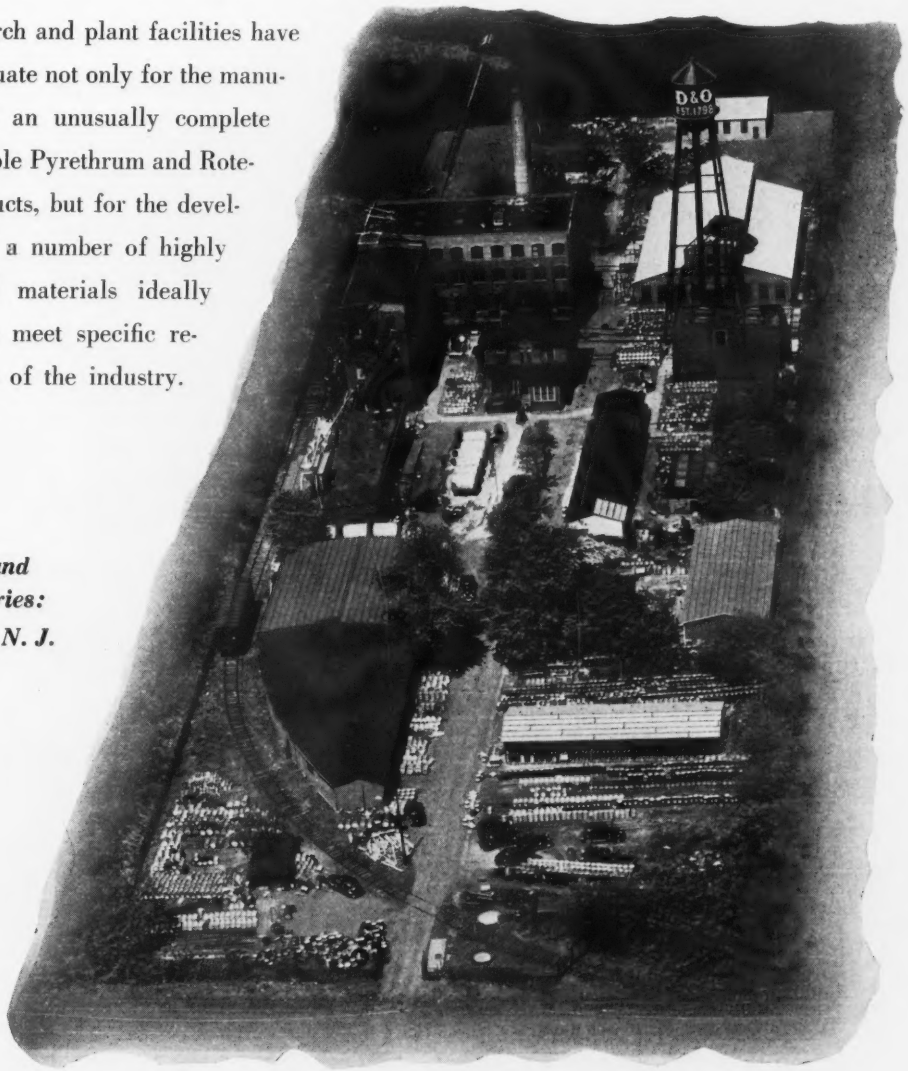
Modern stock sprays must have effective and enduring repellency supplemented by high killing power and an ample safety factor. Protessenol supplies high kill and two types of repellency at a low cost, and is completely safe.

D & O INSECTICIDE POLICY

"The Right Product in the Right Place"

The D & O development of Pyrethrum and Rotenone insecticide materials has been based on the firm belief made even firmer by experience that no single product can hope to meet the numerous and sometimes incompatible requirements of the industry, and that to force or even to encourage the use of any material for purposes for which it is unsuited is a disservice to buyer and seller alike. The natural corollary was that products must be developed to fit the purposes for which they were to be used.

Our research and plant facilities have been adequate not only for the manufacture of an unusually complete line of staple Pyrethrum and Rotenone products, but for the development of a number of highly specialized materials ideally adapted to meet specific requirements of the industry.



Plant and Laboratories: Bayonne, N. J.

DODGE & OLCOTT COMPANY

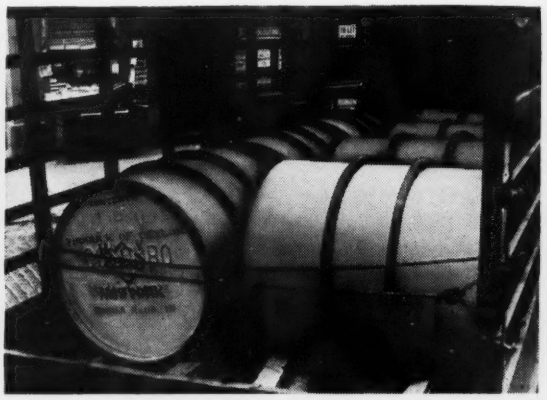
180 Varick Street **New York, N. Y.**

BOSTON : CHICAGO : PHILADELPHIA : ST. LOUIS : LOS ANGELES

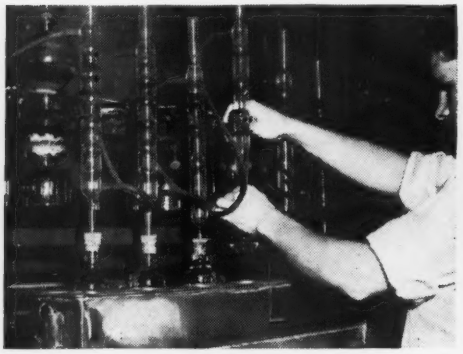
Mister, you need help not sympathy

THIS IS HOW M M & R HELPS MANUFACTURERS MAINTAIN PRODUCTION ESTIMATES WITHOUT SACRIFICING QUALITY OR PRODUCT IDENTITY

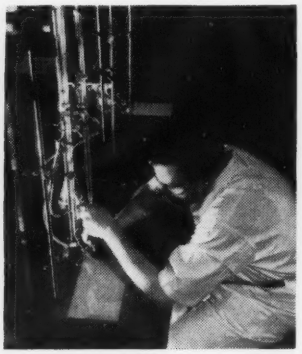
1. Once a Familiar Scene in peaceful France were the Lavender pickers whose industry supplied the U. S. with the raw material for Oil of Lavender Flowers. Today such unobtainable oils, and the zooming prices of others, are playing havoc with production budgets and manufacturing formulae. In almost every instance M M & R has a solution that can help the manufacturer out of a tight spot.



2. Through World-Wide Sources, an M M & R purchasing organization that is international in scope, scours raw material markets for first quality oils. The uncertainties of today's primary sources of supply have brought no relaxation of the vigilant purchasing and production efforts that have helped build the M M & R reputation for consistent satisfaction to a constantly expanding clientele.



3. Maintenance of Quality, even in these times, is a prime necessity for manufacturers of countless products. To help, M M & R laboratories are working over-time to improve quality, wherever this is possible, without increasing the price of Essential Oils.



4. Third Degree best describes the extensive laboratory triple-checking to which every Essential Oil sample is subjected before receiving final O.K. from M M & R's technical superintendent.

5. Without Sacrifice of odor characteristics or effectiveness M M & R technicians are providing synthetic substitute perfume oils. Budget-stymied production men should inquire.

A PARTIAL LIST OF WIDELY USED MM&R NEUTRALIZING & PERFUME OILS

NEUTRALIZERS
(non-perfuming)
Neutralizer #801 M M & R
Neutralizer #202 M M & R
Deodorant L37

FOR INSECTICIDES
Perfume Oil Sweetgrass
Perfume Oil Chrysanthemum
Perfume Oil Cinnamon

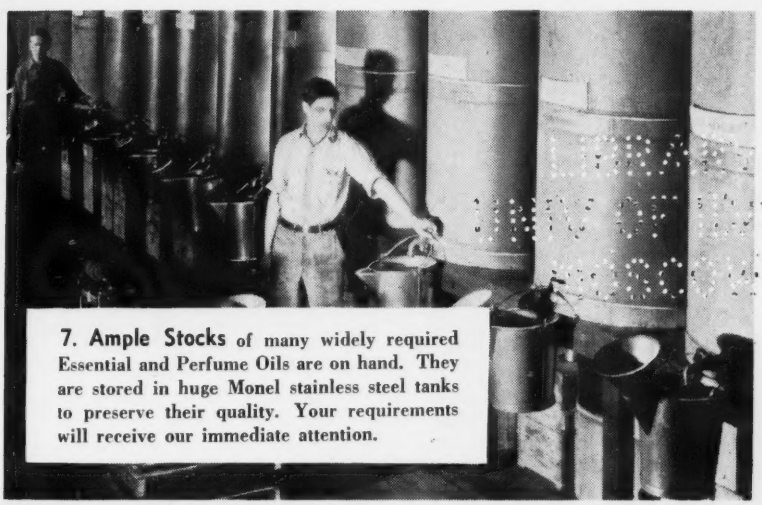
Perfume Oil Vanilla
Bouquet B.L.S. (lilac)
Viola M M & R

FOR THEATRE SPRAYS
(miscible in water — ideal for non-alcoholic sprays)
Bouquet Bluebell
Oriental No. 225
Trefle L.H.

FOR PARA BLOCKS
Rose PCFX
Bluebell FX
Royal Mint FX

REPLACEMENTS:
Imit. Lavender Oil No. 30
Imit. Bergamot M M & R
Oil Lemongrass Sub. No. 619
Andro M M & R
Jerale M M & R
Citronella Sub. No. 21
(for Oil Citronella)
Form-O-Sass
S-O-Frass
(for Oil Sassafras Artif.)
Japp-O M M & R (for Oil of Camphor Water White)
Sass-O M M & R (for Oil of Camphor Sassfrassy)
Annol M M & R (for Oil of Anise—technical use)

6. Like a Who's Who of America's best known manufacturers reads the M M & R customer roster. Serving more producers than at any time in almost a half century, M M & R has a greater responsibility to American industry now than ever before. To the many insecticide, soap, and Allied products manufacturers, M M & R pledges its earnest cooperation, the full assistance of its technical staff for the solution of perfuming or deodorizing problems.



7. Ample Stocks of many widely required Essential and Perfume Oils are on hand. They are stored in huge Monel stainless steel tanks to preserve their quality. Your requirements will receive our immediate attention.

8. No. 1 Choice of America's 65,000 drug store, college and hospital pharmacies is the M M & R line of packaged Essential Oils and Balsams. Where quality is important, the M M & R brand receives primary consideration.

9. Symbol of Progress is the new M M & R plant in New York City. In M M & R's recently enlarged Chicago warehouse sufficient supplies are stocked for efficient servicing of the great area served by this center.

It has been an M M & R privilege to cooperate with many manufacturers in *finding the answer* to difficult perfuming and odor neutralizing problems. For many other producers, the answers to their immediate difficulties may be available at once, *simply for the asking.* When this is not the case, the M M & R technical department will conduct the necessary tests to find a solution. *Your inquiries are welcome.*

MAGNUS, MABEE & REYNARD, INC.
QUALITY ESSENTIAL OILS, BALSAMS, AROMATIC CHEMICALS, BASIC PERFUMES, FLAVORING MATERIALS . . SINCE 1895
16 DESBROSSES STREET, NEW YORK CITY • 221 NORTH LASALLE STREET, CHICAGO

Supplies the Field

WE ARE NOW ABLE TO OFFER YOU

Linalyl Acetate from Bois De Rose Brazilian

Methyl Benzoate

Methyl Eugenol

Methyl Iso Eugenol

Methyl Phenyl Acetate

Oil Petitgrain Terpeneless

Phenyl Acetic Acid

Phenyl Ethyl Acetate

Rhodinyl Acetate

Rhodinyl Formate

Terpineol

Terpineol Extra

Terpinolene

Terpinyl Acetate Extra

Tolyl Aldehyde

Vetivert Acetate

Vetiverol

Coumarin Crystals

Diphenyl Oxide Aromatic Grade

Diphenyl Methane

Indol

Methyl Anthranilate

Methyl Salicylate U.S.P.

Phenyl Ethyl Alcohol

Styralyl Acetate

Klenz-Aire Deodorant Oils

Antiseptic	Honeysuckle	Oriental
Bouquet	Jasmin	Pine Needle
Cedar	Lavender	Rose
Clover	Lilac	Sandalwood
Eucalyptus	Mint	Trefle
Gardenia	New Mown Hay	Wisteria

This formula makes a finished deodorant spray in milky emulsion form which may be colored any shade to make it more attractive.

There is a great field for a deodorant of this type. It kills all tobacco, cooking, theatre and tavern odors. It purifies the air of any public place where crowds assemble. A little of this finished spray solution used by means of a spray directly into public urinals, will have an instant and efficient deodorizing effect.

Klenz-Aire Deodorant Oils will absolutely accomplish what we claim for them. Experiment yourself and be convinced.

Formula For Use

3 ounces Klenz-Aire Deodorant Oil
3 ounces Formaldehyde U.S.P. 40%
Balance—water to make one gallon

C PRODUCTS
RFRATED
GO MEMPHIS · PITTSBURGH
FACTORY: Springdale, Conn.

SANTOPHEN 7

A GERMICIDE AND INDUSTRIAL PRESERVATIVE

Here is an effective germicide and industrial preservative that may be exactly what you are looking for... to improve your present formulas... or to replace materials formerly used.

Santophen 7, a mixture of ortho- and parabenzylphenol, is manufactured by Monsanto from basic raw materials, thus assuring satisfactory quality and uniformity in all shipments. Santophen 7 is available in limited commercial quantities for immediate shipment.

For samples and full information, write: MONSANTO CHEMICAL COMPANY, St. Louis, U. S. A. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Montreal.

Characteristics of Santophen 7

PROPERTIES

Appearance:	Light yellow, semi-crystalline mass
Odor:	Faint phenolic
Specific Gravity:	1.088—1.098 (55°C/55°C)
Refractive Index:	1.579—1.589 (55°C)
Crystallizing Point:	40°C minimum
Effect on Metals:	Non-corrosive
Toxicity to Microorganisms:	Highly toxic to bacteria, fungi, protozoa

USES

As a Disinfectant:	Hospital and general disinfectants. Cold instrument sterilization. Santophen 7 is easily solubilized for aqueous disinfectant use by formulation with dispersing agents, such as sulfonated oils and soaps; with caustic soda; with solvents, such as alcohol; and combinations of the foregoing.
As an Enhancing Agent:	Santophen 7 effectively enhances coal tar and cresylic acid disinfectants.
As an Industrial Preservative:	Soybean protein, blood albumin, casein, glue, starch, and dextrine can be preserved with Santophen 7 alone or in combination with other preservatives.
As a Fungicide:	Because of its effectiveness in controlling fungi, Santophen 7 is of interest in preventing deterioration of cellulose materials and in the disinfection of floors contaminated by such organisms as the Trichophytons.

MONSANTO CHEMICALS
SERVING INDUSTRY... WHICH SERVES MANKIND

YOU, too, will decide to put DHS Activator* in your formulations next year, when you learn of the extra wallop you can get with this proved activator for toxic combinations.

HERE ARE SOME REASONS WHY:

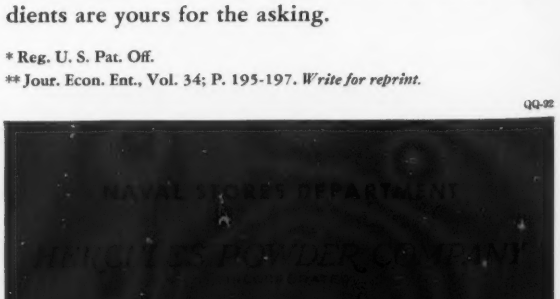
1. Increases knockdown and kill of liquid sprays.**
2. Odor — pleasant, non-irritating, brings repeat orders.
3. Stable—promotes retention of toxicity and clear dilution in storage.
4. Increases effectiveness against crawling insects.
5. Non-toxic, as used, to warm-blooded animals.
6. Miscible with all ingredients used in liquid insecticides and sprays.

Results of extensive research on various grades of sprays made from many combinations of toxic ingredients are yours for the asking.

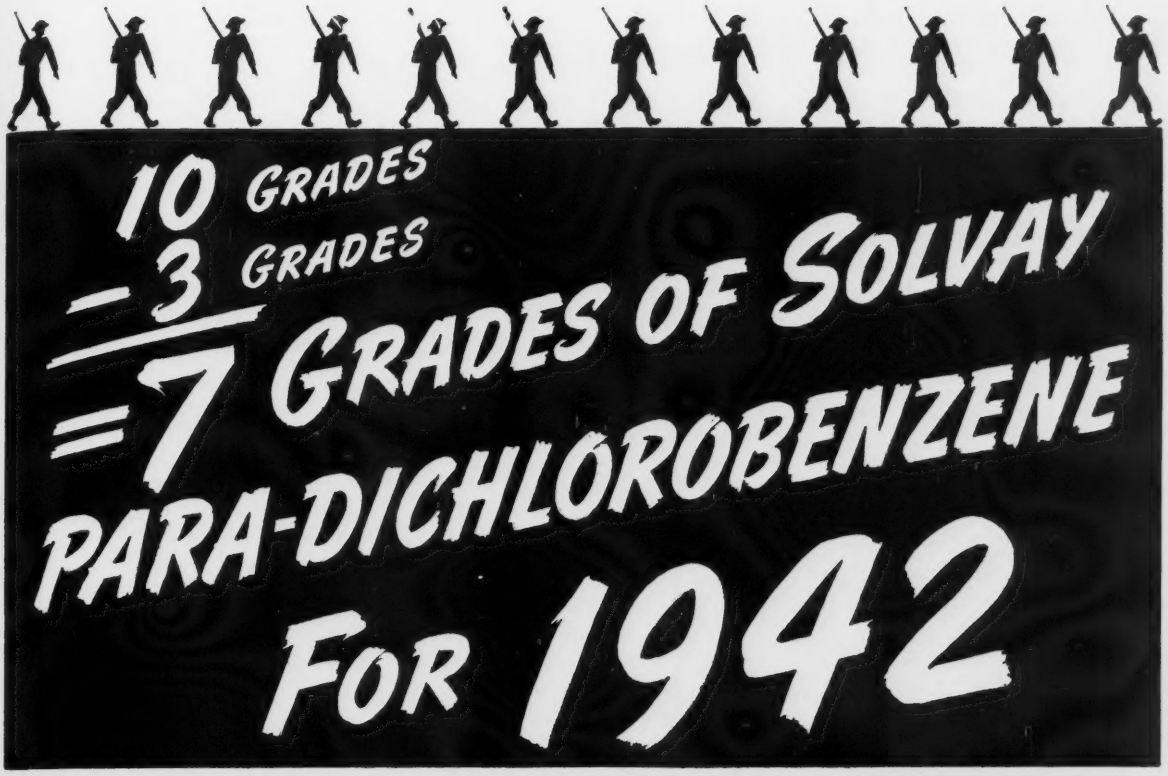
* Reg. U. S. Pat. Off.

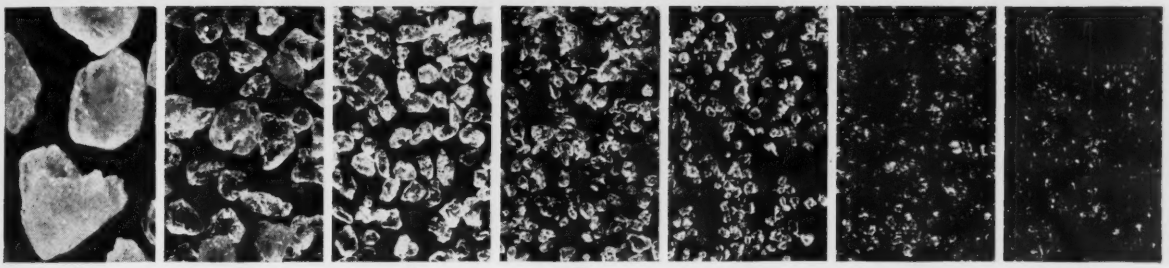
** Jour. Econ. Ent., Vol. 34; P. 195-197. *Write for reprint.*

QQ-92



BRANCH OFFICES: CHICAGO • NEW YORK • ST. LOUIS • SALT LAKE CITY • SAN FRANCISCO





GRADE No. 1 | No. 3 | No. 6 | No. 7 | No. 9 | No. 10 | No. 11

While it is true that moths will continue to work overtime, and while we thoroughly understand that our former 10 GRADES of Solvay Para-dichlorobenzene decidedly helped reduce their idle mischief to the lowest point in history, it has been necessary to drop three of these grades because of another, more important job which has to be done.

Solvay is exceedingly regretful that this step may inconvenience many of its customers who have already made provision in their plants to use any of these three eliminated grades.

Solvay TECHNICAL SERVICE will, therefore, gladly suggest ways and means of utilizing to the best advantage any of the 7 GRADES remaining in the Solvay line.

Since the ingredients of Solvay Para-dichlorobenzene are vital defense materials, it can be readily understood by our customers why it has been required that production of 10 GRADES of Solvay Para-dichlorobenzene be curtailed to 7 GRADES.

The photographs show exact crystal size of the new line of 7 GRADES of Solvay Para-dichlorobenzene.

Send in the coupon today for complete information on Solvay Para-dichlorobenzene for moth control.

SOLVAY SALES CORPORATION
40 Rector Street, New York, N. Y.

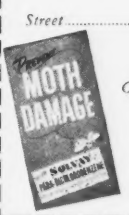
Gentlemen:

Kindly send me your new folder which gives complete information on Solvay Para-dichlorobenzene for moth control.

Name.....

Affiliated with.....

Street.....



City.....

State.....

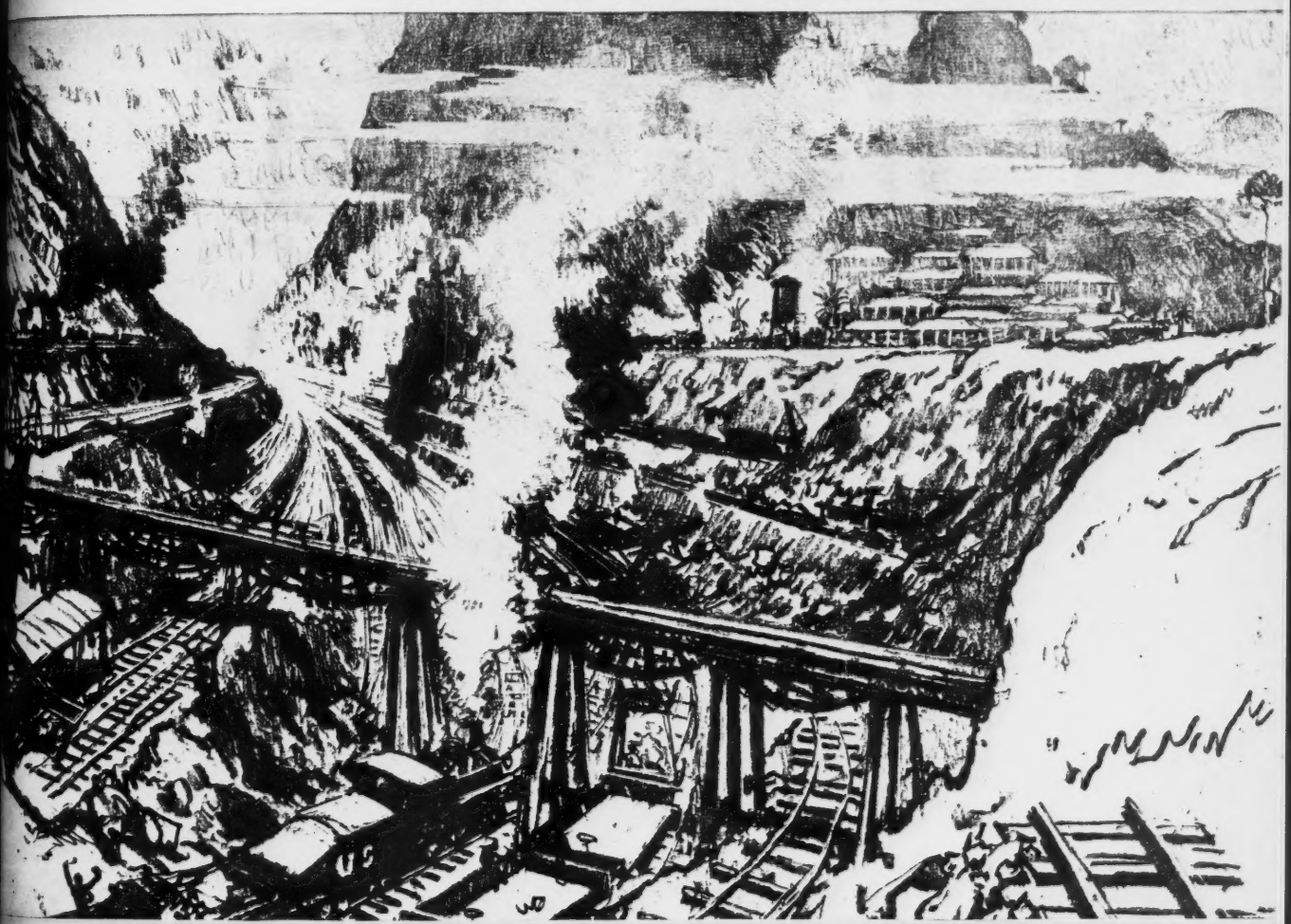
DY-1241

HAD THE PURPOSE been merely to unite two great bodies of water, the Panama Canal in all probability would never have been built. Instead, it was the dream of far-sighted men to achieve a new and greater service for the commerce of man by building this waterway that would join the Atlantic and the Pacific Oceans.

Similarly, two companies, each great in its own right, may enlarge their usefulness by establishing a union between their respective enterprises.

A TESTAMENT TO PROGRESS AND SERVICE...

"THE CUT AT PARAISO." LITHOGRAPH BY JOSEPH PENNELL. REPRODUCED BY PERMISSION OF THE LIBRARY OF CONGRESS WASHINGTON, D. C.



With the Niagara Alkali Company, the Electro Bleaching Gas Company has now been combined to form a single, but larger institution in the fields of chemical manufacture and research.

The Niagara Alkali Company pledges to sustain the high quality and integrity of the products of its manufacture as heretofore. At the same time, the Niagara Alkali Company will be able to extend to old customers the new and greater service that is made possible by broadened facilities, expanded resources, and experience.

Niagara
ALKALI COMPANY
60 EAST 42nd STREET, NEW YORK, N. Y.

CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
Liquid Chlorine

EBG NIAGARA ALKALI COMPANY

LEAPING TO NEW RECORDS!

• More Atlantic Ultrasene was made and sold in the year 1941 than any other year in our history. • More insecticide manufacturers discovered the advantages of this better base, which is free from kerosene odor, evaporates quickly, and leaves no greasy stain. • Switch to Atlantic Ultrasene *now* for a better balance sheet in 1942. Defense priorities have not affected *your* market or *our* ability to supply you with Ultrasene. Atlantic Refining Company, Philadelphia, Pa., U. S. A.

ATLANTIC ULTRASENE

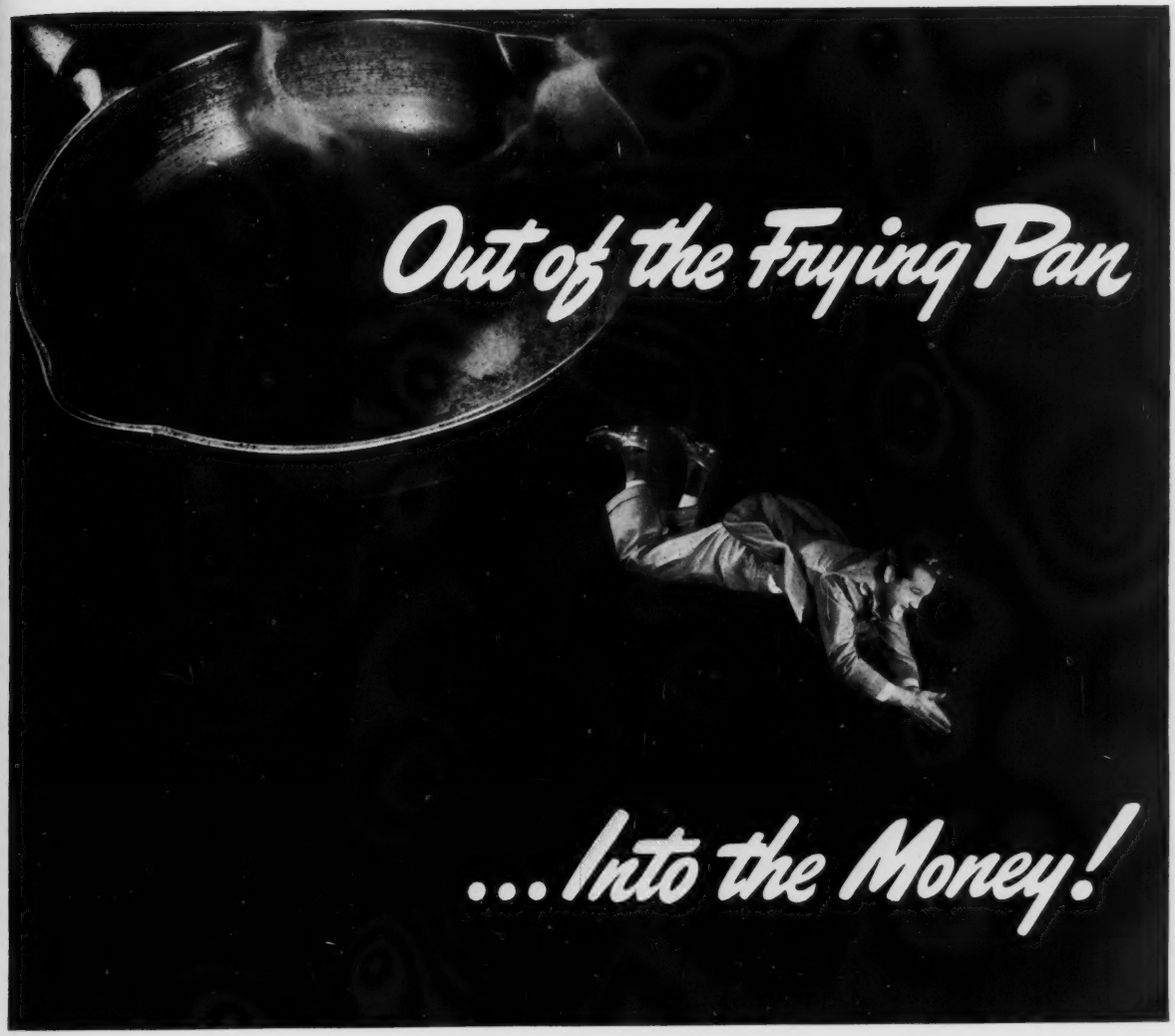
A BETTER BASE FOR BETTER INSECTICIDES

THERE'S A REASON

● There's a reason why the housewife will prefer one insecticide to another. Both kill effectively, yet one is more pleasant to use, nicer in the home. This is the job that proper, scientific perfuming can do, perfuming that unobtrusively covers the obnoxious kerosene odor but leaves no perfumy pall.

Send us a gallon of your unperfumed spray and let us submit our suggestions.

VAN AMERINGEN-HAEBLER, INC.
315 Fourth Avenue, New York City



PEP UP SALES
STEP UP PROFITS
PACK IN GLASS

GLASS CAPS

ANCHOR HOCKING

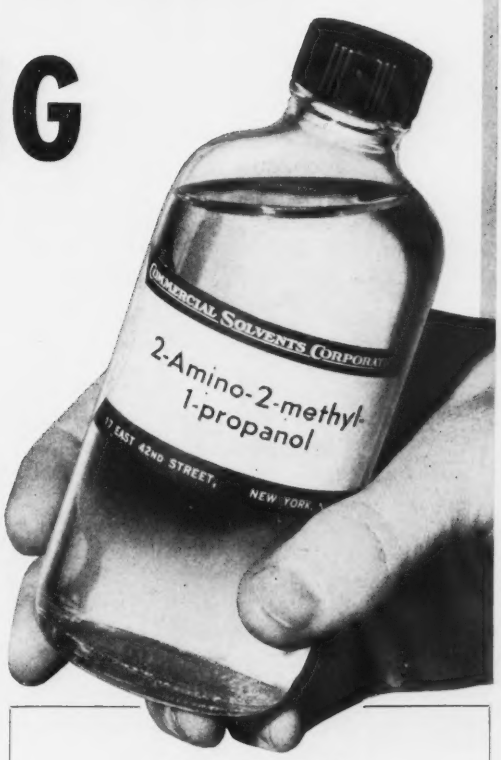
ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO

Usually, getting out of a tough spot means getting into a tougher one. But here's one time you win all ways. Get out of the "defense squeeze" on packaging materials, pack your insecticide in glass. Instead of being compelled to cut production, you will assure your packaging supply and actually increase sales through all the merchandising benefits of glass.

The tough, lightweight Anchor Hocking amber glass containers shown here are built to stand the rough and tumble of high-speed production lines. Topped with a flattering Anchor NKCT Cap they offer a complete package that steals the show on display, catches the consumer's eye, gives her immediate confidence in your insecticide. Send today for samples and further information.

Try This Powerful New EMULSIFYING AGENT

Especially suited for polishes, cleaning compounds, and similar types of emulsions



Here is a new emulsifier — 2-Amino-2-methyl-1-propanol — that has many characteristics which make it useful in the formulation of cleaning and polishing compounds. It has a relatively high boiling point, 165°C., and a low combining weight, 89.14. Soaps of this Aminohydroxy compound are practically odorless and have an extremely high emulsifying efficiency per unit weight.

Major improvements in your present products or processes may be achieved with Amino-methyl-propanol. Careful investigation may also lead to the development of entirely new products.

Write today for a sample and further information

PROPERTIES OF 2-AMINO-2-METHYL-1-PROPANOL
Molecular Weight 89.14
Melting Point 25° C. to 25° C.
Boiling Point 165° C. (at 760 mm. of Hg)
pH of 0.1 M Aqueous Solution at 20° C. 11.27
Solubility in water—grams per 100 cc. at 20° C. Completely miscible

COMMERCIAL SOLVENTS
Corporation
17 East 42nd Street, New York, N. Y.

A Merry Christmas
and a
Happy New Year
To All of You

BAIRD & McGUIRE, Inc.

Home of Buckingham Waxes

PRODUCED by a trained chemical staff and backed by over twenty-five years of manufacturing experience, the Buckingham line of waxes and polishes continues steadily to gain in popularity. We offer a complete service to the repacker with a full line of quality products ready for sale under your own label. And resales come more easily with the Buckingham line.

Write for samples and quotations today.

Waterproof No Rubbing Liquid Wax
Prepared Liquid Wax (the polishing type)
Prepared Paste Wax
Powdered Dance Wax
Furniture Polish (White Emulsion)
Gym Finish (Mopping Varnish)
Floor Seal
Scrub Soaps
Pre-Wax Cleaner
Bowling Alley Polish & Cleaner
Metal Polish (Non-Settling)

Buckingham Wax Corporation

VAN DAM ST. AND BORDEN AVE. LONG ISLAND CITY, N. Y.

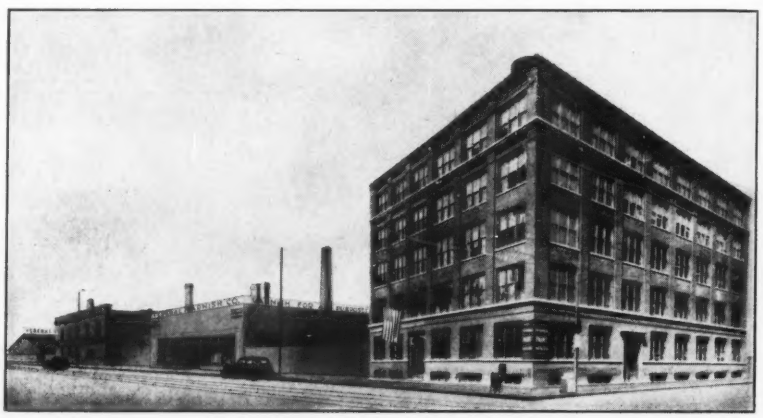
Manufacturers of a complete line of

FLOOR WAXES and POLISHES—BULK and PRIVATE LABEL

M. J. FLANAGAN
VICE-PRESIDENT

J. H. LAWSON
PRESIDENT

BEST WISHES FOR A HAPPY PROSPEROUS NEW YEAR



FEDERAL VARNISH CO.

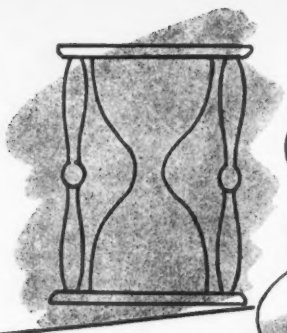
331-337 W. Van Buren Street

CHICAGO

•

"FEDERAL FINISHES FOR FLOORS IN FORTY-TWO"

MR. LAWSON AND MR. FLANAGAN WILL BE GLAD TO SEE YOU AT THE CONVENTION TO DISCUSS FLOOR FINISHING AND FLOOR FINISHING MATERIALS



1918-1

Read This Letter from a Great Sales Manager to One of His Men

Dear Joe:

Your letter of April 19th came in yesterday's mail. I've waited until today to reply because I wanted time to do some thinking. I want to answer the questions you ask. But more than that, I want you to understand the reasons for the things that are happening in our business today.

You have asked me four important questions:

1. How soon can your customers expect delivery on certain orders they have placed?

2. Why should you call on customers when you haven't any product to sell?

3. What are you going to say to these customers?

4. Why do we continue to advertise when we can't deliver the goods?

First of all, let's take a look at the situation as a whole. Right now this country is facing a great national emergency. As you know, the Government is spending huge sums of money for war materials. This money is making more jobs for more people. And when people have more money, they do more spending. Business as a whole is better now than it has been for years. This is a period of prosperity.

★

For the first time in the history of our business, we are in a position where we can't manufacture and deliver our products as fast as people buy them. We are oversold. And I'll tell you why we haven't been able to turn out goods as fast as we'd like to. Certain raw materials that go into our products are needed for the manufacture of defense supplies. And the companies that are working on war orders are buying these materials in great quantities. The supply just doesn't meet the demand.

Another thing that has slowed us up is lack of manpower. Labor is hard to get. Men are wanted for defense industries. Many are going into the army. So, from a standpoint of producing the goods, we've had plenty of problems. We're working day and night to solve these problems, but it takes time and patience. Believe me, we're as anxious to deliver as you are to sell. In a few more weeks we hope to be caught up. In the meantime, you must understand and be certain that that your customers understand that we're doing our very best.

Now why should you keep calling on your dealers when you haven't any product to sell? Here's why. Because you have a product to sell. That product is this company, its name and its reputation.

And right now, when you can't promise delivery, it's the most important product in the world. Why? Because this national emergency is only temporary. Some day—a year, two years, three years from now—normal times will return. People will go on living, thinking, and acting as they did before. Yes, and they'll go on buying, too, and we want them to go on buying our product then as they do now. So your job is bigger now than it has ever been.

You must keep this company and its products everlastingly in the minds of your buyers. That means contacts and more contacts, whether you can promise delivery or not. You have a new sales story to tell. It's the story of this company, what it stands for, and what it is trying to do. Be certain that you get this story across clearly to your dealers. It's your sales insurance for future business.

★

Now about our advertising. Why advertise when we can't deliver? For the best reason in the world. Because this company is in business to stay. I say again that this national emergency is only temporary. But what's going to happen when it's over? People still will have definite needs for the products we make. Do you want these millions of buyers to forget us and our line? If they do, we'll all be out of jobs.

Advertising is more important right now than ever before. It has a bigger job to do because it must keep people sold on our products, even though they can't buy them. We're not only going to continue our advertising—we're going to do even more. It's another form of business insurance.

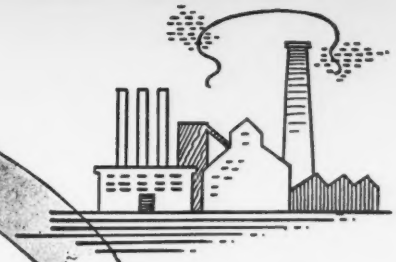
You keep your dealers sold. Our advertising keeps our customers sold. Sales and advertising must and will work together for the future prosperity of this company and its employes.

You will hear about companies whose salesmen have ceased to make their regular calls. These same companies have stopped advertising. Our policy is different. We believe that in the long run we will prosper while they will fail.

Keep all of these things in mind. Remember, you're selling for the future as well as for right now. And don't pay too much attention to this "depression after the boom" talk. If you do your job as we intend to do ours, there'll be no depression for us.

Sincerely yours,

The foregoing letter was forwarded to SM by a reader who did not identify the author. A footnote at the bottom of the letter reads, "The letter was written by one of the greatest sales managers we have ever known. It was dated April 21, 1918."



1941 ...History Repeats!

...Why should you call on customers when you haven't any products to sell?

Why should you continue to advertise when you can't deliver the goods?

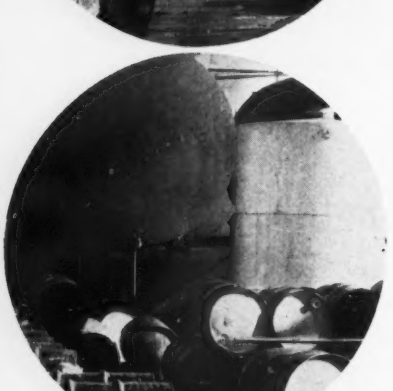
Read the letter on the opposite page. If you agree with this sales manager---then you'll realize that such speculation has given way to conviction for many of America's leading manufacturers today who faced this problem in 1918. They survived and prospered...because they *"Kept their products and their identity everlastingly in the minds of their customers."*

• STOCKS

Sufficient quantities of raw materials are kept on hand at all times to handle our normal output. Due to unusually heavy demand for certain grades of disinfectants, certain of our raw materials are at a minimum and immediate delivery is impossible. With but few exceptions orders are shipped within 48 hours after they are received at our plant.

• SHIPPING FACILITIES

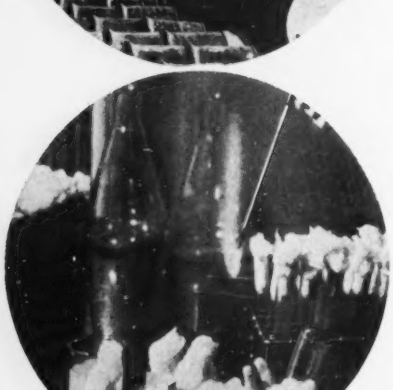
No order is too large and none too small to have our best attention. We own and control a fleet of tank cars holding from 8,000 to 10,000 gallons each. Other size containers range from 55-gallon drums down to one-gallon cans. Returnable drums are charged extra on invoices but may be returned for full refund, freight charges collect. Customer shipping instructions are carefully observed.



For more than a Third of a Century SPECIALISTS in the manufacture of DISINFECTANTS and sanitary CHEMICAL PRODUCTS for the wholesale trade.

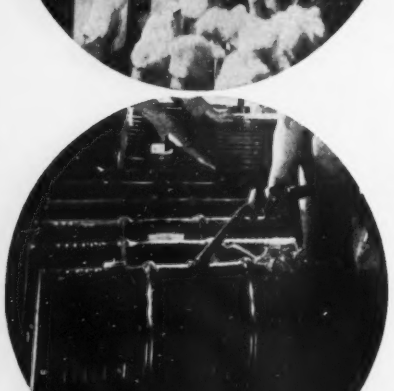
BAIRD & McGUIRE, INC.

Holbrook, Mass. St. Louis, Mo.



• LABORATORY CONTROL

All products are manufactured by us on an extensive scale from ingredients which are subjected to the most exacting chemical tests. No adulterants of any kind are used. Price is made secondary to quality, and we warrant every material to be exactly as represented, and to give the maximum of satisfaction. All disinfectants are tested for Germicidal Efficiency in our own and in commercial bacteriological laboratories.



• CERTIFIED PRODUCTS

This is not an empty name. The term, "Baird's Certified" has come to mean that the product is unexcelled in its field. The purity of raw materials entering the plant are checked rigidly as are the finished disinfectants made from these materials. The Phenol Coefficient and Inert Content are plainly stated on every package.

PINE OIL DISINFECTANTS | COAL TAR DISINFECTANTS | CRESYLIC DISINFECTANTS

SANITARY PRODUCTS

A SECTION OF SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

As the National Association of Insecticide & Disinfectant Manufacturers holds its 28th annual meeting in New York, we realize how far the manufacture and use of household insecticides, disinfectants, and other products of sanitation have advanced in the United States since the founding of the Association back in 1914. Not only has the field expanded numerically to where there are several thousand firms catering in whole or in part to the demand for sanitary chemical products, but with the rise of better living conditions of the past three decades, the use of these materials has expanded far beyond any expectations of the founders of the industry. Today, a regular supply of sanitary products has become a vital necessity in the maintenance of sanitation and as an aid in the protection of the public health. The importance of the industry to the country has kept pace with its remarkable growth in size and volume. May it continue to grow and prosper!

In view of the present highly competitive situation in floor waxes, and the high cost of certain raw materials, particularly carnauba, a tendency to reduce quality in some quarters to meet a price market might almost be classed as a natural sequence of events. There are ever those who demand cheap products, and ever those who are ready to fill this demand. But when quality reduction in a floor wax is carried to the point where products contain *no wax whatever,* we feel that it is about time to call a halt before the entire floor wax business receives a body blow from which it may not too soon recover.

Such products are on the market and labeled "floor wax." If any manufacturer wants to put out a cheap floor dressing, that is his affair, but he most certainly should not label it as a floor wax when it contains no wax. It should be labeled what it is, a floor dressing or floor polish. To call it a wax is plain fraud and will undoubtedly receive the attention of the Federal Trade Commission.

Answering the charge that many present scarcities of raw materials, especially chemicals, are due directly to hoarding by those buyers who have the capital to tie up in large inventories, a mid-west manufacturer stated recently that he did not classify present increased inventories as hoarding. He pointed out that for the past ten years, stocks of raw materials carried by manufacturers have been far below the normal safe inventory level as established by an average of the preceding twenty years. Because of the ability of suppliers to deliver quickly and adequately, he said, buyers have since 1930 become accustomed to carrying only minimum stocks. The heavy buying of the past year or so, he interprets as a return to inventory levels nearer to what might be considered normal.

Insecticide-Disinfectant Manufacturers Meet

N.A.I.D.M. holds 28th annual meeting . . . Hear speakers on priorities and raw materials, cattle sprays, roach sprays, floor waxes, clothes moth control . . . Symposium on containers and container problems . . . Macy expert on consumer angle in insecticides, waxes, etc. . . . Report on disinfectant investigations . . . McDonnell to explain insecticide regulations . . . Morgan of O.P.M. to speak.

A HOST of insecticide, disinfectant and sanitary chemical industry problems are up for discussion at the 28th annual meeting of the National Association of Insecticide & Disinfectant Manufacturers being held at the Hotel Roosevelt, New York, on December 1 and 2. In view of the importance of the meeting this year, especially in matters connected with the national defense program and its effect on raw material supplies, the largest attendance in the history of the Association is reported. The meeting which opened on Monday morning, December 1, will extend for two days, terminating with an informal steak dinner and floor show on Tuesday evening, December 2.

During the initial session of the convention, the main discussion following the annual address of President W. J. Zick of Stanco, Inc., was in the form of a Symposium on Containers. In this symposium, L. A. Trevisan of the American Can Co. outlined the present situation on cans for the insecticide and disinfectant manufacturer. E. F. Bertrand of Owens-Illinois Glass Co. gave a summary of the glass container situation. Frederick Wohlers of the Hinde & Dauch Paper Co. spoke on the paper and paper products situation, particularly in the matter of shipping containers. Steel drums and pails were covered by John Gossett of the Wilson & Bennett Manufacturing Co. Following a ten-minute exposition by each speaker, questions from the floor were asked and answered by the respective experts in regard to the outlook in various containers.

The program for Monday afternoon, Dec. 1, calls for a report of the Legislative Committee by C. L. Fardwell of McCormick & Co., chairman of that committee. E. Freedman, Director of the Bureau of Standards of R. H. Macy & Co., New York, is scheduled to talk on "Viewing Insecticides, Disinfectants, Waxes, and Related Products from the Consumers' Side of the Fence." By C. S. Kimball of Foster D. Snell, Inc., there is to be a paper on "What is Happening in Floor Waxes?" Prof. A. O. Shaw of the Kansas State College of Agriculture will speak on "What a Cow Man Expects of a Cow Spray." H. C. Fuller, Washington consultant of the N.A.I.D.M., will talk on "Problems in Washington with Particular Reference to the Defense Program." J. L. Brenn of the Huntington Laboratories, Inc., Huntington, Ind., chairman of the Priorities Committee of the Association, will give his report on the raw materials and priorities situation.

AT THE Tuesday morning, Dec. 2 session, John N. Curlett of McCormick & Co., vice-president of the Association, will preside. The program calls for papers by Dr. A. E. Back of the U. S. Department of Agriculture, well-known authority on moth control, on "The Control of Clothes Moths and Carpet Beetles." A. M. W. Carter of the Canadian Department of Agriculture will talk on "The Canada Pest Control Products Act and Its Enforcement." "Roach Sprays, a Preliminary Report of a New Laboratory Method for Testing" is the subject of a paper to be presented by Dr. E. R. McGovern of the Bureau of Entomology & Plant Quarantine. Dr. D. P. Morgan of the O.P.M., Assistant Supervisor of the Chemicals Section, will speak on "Priorities as They Relate to Chemicals and Allied Products." A. E. Badertscher will report for the Insecticide Scientific Committee on its findings of the past year.

Dec. 2 in the afternoon, Dr. E. G. Klarmann of Lehn & Fink Products Corp., chairman of the Disinfectant Scientific Committee, will report for that Committee. "The Presence of Certain Pathogenic Organisms on the Walls and Floors of Public Buildings" will be the subject of a paper by Dr. G. J. Hucker of N. Y. State Agricultural Experiment Station at Geneva, N. Y. W. G. Walter of the same experiment station

in New York

W. J. ZICK
N.A.I.D.M. President

will talk on "The Effectiveness of Disinfectants in the Removal of Pathogenic Organisms from Wooden Surfaces." Dr. C. C. McDonnell, Chief, Insecticide Division, Agricultural Marketing Service, will discuss "The New Regulations for Enforcement of the Insecticide Act of 1910." Alvin J. Cox, Chief of the Bureau of Chemistry, California Dept. of Agriculture, who is making a special trip east for the convention, will also speak.

The annual election of officers and three members of the Board of Governors will be held on Tuesday afternoon, Dec. 2. The Association will hold a cocktail party at 6:30 P.M. also on Tuesday, to be followed by the annual informal beefsteak dinner and floor show in charge of J. B. Magnus of Magnus, Mabee & Reynard, Inc., L. J. LaCava of Continental Can, and Charles Opitz of John Opitz, Inc. Preceding the regular meetings on Dec. 1, there will be an annual meeting of the Board of Governors of the Association at the Hotel Roosevelt on Sunday afternoon, Nov. 30 at 5:00 P.M. Several important committees will hold meetings also on Sunday morning and afternoon preceding the general meetings. The program is in charge of R. F. Joyce of Derris, Inc., assisted by C. E. Smith of Socony-Vacuum Oil Co. and John A. Marcuse of the West Disinfecting Co. D. G. Hoyer of John Powell & Co. will be in charge of the registration desk.

The program in detail follows:

PROGRAM

Monday Morning—December 1st
W. J. ZICK, *Presiding.*

Registration.

Meeting called to order.

Announcements.

Address of President W. J. Zick, Stanco, Inc.

Appointment of Committees.

Report of Secretary Ira P. MacNair, MacNair-Dorland Co.

Roll Call and Introduction of Guests.

Election of Nominating Committee.

Report of Entertainment Committee: J. B. Magnus, Magnus, Mabee & Reynard Inc.

Symposium on Containers:

Cans—L. A. Trevisan, American Can Co., New York.

Bottles—E. F. Bertrand, Owens-Illinois Glass Co., Toledo, O.

Paper & Paper Products—Fred Wohlers, Hinde & Dauch Paper Co., Sandusky, O.

Steel Drums and Pails—John Gossett, Wilson & Bennett Mfg. Co., Chicago, Ill.

Group Luncheon.

Monday Afternoon—December 1st
J. N. CURLETT, *Presiding.*

Announcements.

Report of Legislative Committee: C. L. Fardwell, McCormick & Co.

"Viewing Insecticides, Disinfectants, Waxes, etc., from the Consumers' Side of the Fence"—E. Freedman, Director of Bureau of Standards, R. H. Macy & Co., New York.

J. B. MAGNUS
. . . entertainment

JOHN POWELL
. . . finances

L. J. LaCAVA
. . . entertainment

"What a Cow Man Expects of a Cow Spray"—A. O. Shaw, Associate Professor of Dairy Husbandry, Kansas State College of Agriculture, Manhattan, Kansas.

"What Is Happening on Floor Waxes?": C. S. Kimball, Foster D. Snell Inc.

"Problems in Washington with Particular Reference to the Defense Program": H. C. Fuller, N.A.I.D.M. Washington Consultant.

Report of Priorities Committee: J. L. Brenn, Huntington Laboratories, Inc.

Adjournment.

Tuesday Morning—December 2nd
J. N. CURLETT, *Presiding.*

Announcements.

Report of Insecticide Scientific Committee: Dr. A. E. Badertscher, McCormick & Co.

"The Control of Clothes Moths and Carpet Beetles": Dr. E. A. Back, Bureau of Entomology & Plant Quarantine, U. S. Department of Agriculture, Washington, D. C.

"The Canada Pest Control Products Act and Its Enforcement": A. M. W. Carter, Inspection Assistant, Department of Agriculture, Ottawa, Canada.

"Roach Sprays: A Preliminary Report of a New Laboratory Method for Testing" by E. R. McGovran and J. H. Fales. Presented by Dr. E. R. McGovran, Control Investigations, Bureau of Entomology & Plant Quarantine, Beltsville, Md.

Report of Nominating Committee.

"Priorities as They Relate to Chemicals and Allied Products": Dr. D. P. Morgan, Assistant Superviser, Chemicals Section, Office of Production Management, Washington, D. C.

Group Luncheon.

Tuesday Afternoon—December 2nd
W. J. ZICK, *Presiding.*

Announcements.

Report of Disinfectant Scientific Committee: Dr. E. G. Klarmann, Lehn & Fink Products Corp.

"The Presence of Certain Pathogenic Microorganisms on the Walls and Floors of Public Buildings": Dr. G. J. Hucker, Chief in Bacteriology, N. Y. State Experimental Station, Geneva, N. Y.

"The Effectiveness of Disinfectants in the Removal of Pathogenic Microorganisms from Wooden Surfaces" by W. G. Walter and G. J. Hucker. Presented by W. G. Walter, N. Y. State Experimental Station, Geneva, New York.

"The New Regulations for Enforcement of the Insecticide Act of 1910": Dr. C. C. McDonnell, Chief, Insecticide Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C.

Election of Officers and Three Members of the Board of Governors.

Reports of Miscellaneous Committees.

Report of Resolutions Committee.

Unfinished Business.

Final Adjournment

6:30 P.M.—Cocktail Partv.

7:30 P.M.—Informal Beefsteak Dinner and Floor Show.

P. Calvert Cissel of American Disinfectant Co., Washington, elected president of the National Pest Control Association at the recent annual convention held in San Francisco, Calif.

Sanitary Products Mfrs. Exhibit

The annual trade show of the Chicago Retail Druggists Association in Chicago early last month attracted a number of exhibits from manufacturers of sanitary products.

Zonite Products Corp., N. Y., displayed their "Larvex" moth proofing compound, "Zonite" and other preparations, with C. A. Seiffe, western sales manager, Chicago, in charge. Also assisting at the booth were W. A. Corcoran, C. R. Canfield and Jack Hetherington. Newspaper advertising for "Zonite," Mr. Seiffe said, had in the first nine months of this year, increased sales 53 per cent over all of last year, when magazine copy alone was used. Bell Chemical Co., Chicago, exhibited a varied line of sanitary chemicals, including Bell's "Kilzem" liquid insecticide, roach, ant and insect powders, fly and moth liquids, and a new "NoRatz" red squill rat paste in tubes. Also shown was a line of cleaners for white shoes and kid gloves and a clothes cleaning fluid. I. Bell, son of the founder of this 25-year-old Chicago concern, was in charge of the booth.

—— ♦ ——

A recent investigation of the insecticidal properties of a number of fatty acid derivatives revealed that certain primary and secondary amines are highly toxic to the common house fly. Octyl and decyl amines show great insecticidal activity, but their use is limited by the irritant effect of primary amine solutions on the nose and throat. Dioctyl amine, however, not only has an exceptionally high paralyzing and killing power for insects, but is also comparatively nonirritating to humans, and nontoxic to domestic animals, as well as being free from objectionable odor. *Chem. Age*, 45, 149 (1941).

—— ♦ ——

Kerosene solutions rich in pyrethrin II (5 per cent of pyrethrin I, 95 per cent of pyrethrin II), when applied in measured volumes to adult cockroaches with a micropipet, caused more rapid and higher percentages of knockdown than similar solutions rich in pyrethrin I (85 per cent of pyrethrin I, 15 of pyrethrin II). Maximum knockdown was reached in 30-120 minutes. The insecticide that was rich in pyrethrin I caused higher mortalities at concentrations that produced 17-77 per cent mortality, but with more concentrated solutions that killed 80-83 per cent of the roaches the mortalities caused by pyrethrins I and II were about equal. Female roaches were about twice as resistant to the pyrethrin preparations as were male roaches. In most of the tests, some of the roaches that were knocked down 2 hours after treatment recovered and were living 4 days later. E. R. McGovran, E. L. Mayer and Fred Acree, Jr. U. S. Dept. Agr., Bur. Entomol. Plant Quarantine E-544, Aug. 1941.

—— ♦ ——

Sugar beet is dried, pulverized, treated with a liquid poisonous material, dried again, and used as a toxic bait for the extermination of rodents. J. Freybert and W. Freyberg. British Patent No. 516,703.

—— ♦ ——

Liquefied wax or wax-containing material is emulsified with a nonreactive liquid which is substantially immiscible therewith. The emulsion is chilled to a temperature such that the higher-melting waxes are solidified. The solidified waxes are separated from the remaining constituents of the emulsion. August H. Schutte. British Patent No. 526,744.

FLEA and LOUSE CONTROL

ALTHOUGH many of the older powders for the control of fleas and lice on domestic and farm animals, as well as humans, are still based principally on pyrethrum, there has been a marked increase in the use of rotenone derivatives in these products over the past five or six years. The use of derris or cube diluted with inert dusts or powders represents a common form of the newer flea and louse powders. There are also products on the market which are mixtures of rotenone dusts with pyrethrum. Although there has been a trend toward the wider use of rotenone in flea and louse products in the United States in recent years, powdered derris root was used in England over twenty years ago in these preparations because its efficacy against these insects was recognized then.

The product which comes first to mind in thinking of the market for flea and louse preparations is the standard two or three ounce can of flea powder for domestic pets. In these preparations, rotenone has found a wide use during the past few years for several reasons. A standard product consists of 1 per cent of rotenone, 2 or 2½ per cent of other derris resins, and the balance inert dust such as talc, chalk, or rice starch, the latter being a good extender because it is said to give a gloss to the coat of the animal. In some of these rotenone products, less rotenone is used and a percentage of pyrethrum added. The cost of a rotenone flea powder on the whole for the past five years has been considerably less than a product based mainly on pyrethrum and this may have been a factor in the trend toward increased use of derris and cube.

It is worth noting that in the ten years since derris was first imported into the United States in commercial quantity, annual consumption has grown to a present estimated figure of eight to ten million pounds, and substantial quantities of this total are going into louse and flea powders. So fast has this market developed that many government publications on which the householder and the farmer often depend for their insect control advice are out of date on the suggestions they make, not having been revised to bring them in step with current practice.

Some of the older products on the market still hold to their pyrethrum formulas. A well known product consists of a mixture of 65 per cent pyrethrum, 30 per cent powdered sulfur and 5 per cent inert. Incidentally the company packing this product would do well to revise its label, as it has not been the best form for the past year to use on a label such a phrase as "pyrethrum—60 per cent." Regulations of the U. S. Department of Agriculture call for listing the percentage *pyrethrins* content specifically, and classifying the balance of the pyrethrum as inert.

Other products combine pyrethrum and rotenone,—the combination being a good one, as it couples the quick action of pyrethrum with the sure kill of rotenone and its ten-

CONTROL OF FLEAS ON DOMESTIC PETS IS BUT A SMALL SECTION OF THE EXPANDING MARKET FOR FLEA AND LOUSE PREPARATIONS

dency to prevent reinfestation. One popular product of this type contains 1.00 per cent rotenone, 0.12 per cent pyrethrins, 4 per cent ethyl ether extractives (resins), and 94.88 per cent inactive ingredients. Rotenone is also used in conjunction with sulfur in other products. Many of the better products use specially processed rotenone derivatives, rather than straight derris or cube powder. One very good product is made by dissolving derris resins in a solvent and dispersing on a carrier. This procedure increases the availability of the insecticidal activity considerably.

Most of the products are recommended also for control of lice, dog ticks, sticktites, etc. as well as fleas. Use on the human body to control chiggers, head, body and crab lice is also commonly suggested. The problem of controlling lice on canaries is rather unique. Powders made with rotenone and a talcum base give the canaries mechanical pneumonia, and the only type product which can safely be used is a straight pyrethrum powder.

Of the many varieties of fleas there are three that are the most common and serious pests. These are the dog flea (*Ctenocephalides canis Curtis*) the cat flea (*C. felis Bouché*) and the human flea (*Pulex irritans L.*). The stick tight flea is another pest common in the south (*Echidnophaga gallinacea Westw*). Numerous rodent fleas also found associated with human habitations include the oriental rat flea (*Xenopsylla cheopis Roths.*) the European rat flea (*Nosopsyllus fasciatus Bosc.*) and the mouse and rat flea (*Ctenopsyllus segnis Schon.*)

All fleas require blood to reproduce, and while they prefer certain hosts, will transfer their attentions to man or any other animal in the absence of that host. They often breed in large numbers in basements or outbuildings where dogs, cats or farm animals are kept. Even when their hosts are taken away, the flea maggots proceed with their development, and the resulting adults may live for several weeks without food. This explains the frequent cases of people returning home after an extended trip to find their homes apparently unaccountably overrun with fleas.

This all serves to emphasize the point that it is not enough to clear up individual dog and cat infestations to solve an acute flea problem. The breeding places themselves must be treated. A good spraying with a regular liquid fly spray or properly diluted coal tar disinfectant in the infested basement or barn is usually effective. One-half gallon for 1,000 square feet of floor space is about the right quantity. A compressed air sprayer or a bucket pump fitted with a high pressure hose serve best with the disinfectant. Of course all refuse in which the fleas may breed should be swept up and burned prior to the disinfectant spraying.

Where fleas have infested living quarters and are breeding in rugs, furniture, etc., flake naphthalene is ordinarily effective. About five pounds is the proper amount for a normal sized room. It should be spread well over the floor and furniture and the room closed off for a day. A thorough spraying of the rug, carpet, furniture, and crevices with a good fly spray is likewise effective. In severe infestations fumigation with hydrocyanic acid or methyl bromide are sometimes resorted to.

In the same general family as flea powders are the insecticidal shampoos. A well known product consists of a 20 per cent coconut oil soap with the addition of camphor oil, pyrethrum, rotenone and derris resins. It is recommended for washing pets and is suggested also as a treatment for head lice and crab lice on humans. For the latter purpose rotenone and pyrethrum products seem to have come into much more common use in recent years, replacing the conventional larkspur or blue ointment to a considerable extent. Blue ointment has the disadvantage of being poisonous and larkspur is not readily available. There is danger of skin irritation with mercurial ointment which should not be used too freely or over too much of the body at one time. As the average person is not allergic to pyrethrum and derris in the concentrations commonly used, their use in the control of lice on humans has made much progress in recent years.

MAN is commonly attacked by the head louse (*Pediculus humanus L.*) the body louse or "cootie" (*Pediculus humanus corporis Deg.*) and the pubic or "crab" louse (*Phthirus pubic L.*). Besides being a serious annoyance, lice carry typhus fever, relapsing fever and trench fever. Effective control involves eradication of lice and eggs on the body as well as those in the clothing and living quarters. Disinfestation must be systematically undertaken and treatment of the individual, his clothing, living quarters, etc., should be simultaneous.

In treating head lice, close clipping of the hair is an aid, although not absolutely essential. Derris or cube powder of about 3 per cent rotenone content is commonly used and is effective either as a dust or as a wash. When applied as a wash the following proportions are recommended in Circular No. 9, U. S. Department of Agriculture: derris or cube powder, five level tablespoonfuls, neutral soap, two level tablespoonfuls, and one quart of warm water. A second application is necessary ten days later. Warning should be given the user to keep the wash from contact with the eyes.

The same circular recommends a liquid soap of the following formula for the treatment of body lice: one part of soap chips boiled in four parts of water, with the addition of two parts of kerosene. Derris or cube powder, 3 per cent, are also effective. Two powders of the following composition are also recommended:

(1)	Talc	20 gms.
	Naphthalene	½ gm.
	Iodoform	½ gm.
	Creosote	1 cc.
(2)	Talc	20 gms.
	Sulpuhr	½ gm.
	Creosote	1 cc.

For pubie lice, derris or cube powder or ointments are effective. The ointment is made by mixing one part by volume of powder (200 mesh, 4 to 5 per cent rotenone) in ten parts

of petrolatum. Effective use of a pyrethrum ointment, containing 2 per cent pyrethrins in petroleum jelly, is also described by Angevine in *Soap and Sanitary Chemicals*, March, 1941.

A pest, which, like the flea and louse, is extremely annoying to both man and domestic animals is the chigger. It is the first or larval stage of a large red velvet mite which when mature is entirely harmless. Although the chigger carries no specific disease, its bite can be a serious annoyance. Chiggers are also serious pests of chickens and other fowl. In general chiggers are more troublesome throughout the southern states and in several of the mid western states. As they crawl up from long grass they commonly attack the extremities. Cutting grass and underbrush and applying fine dusting sulphur, about one pound to a thousand square feet, is the normal control. It is necessary to repeat several times at intervals of a week, especially when the applications may be followed by rain.

Sulfur dust has also been used for many years for dusting the body and clothing, the finer sulfurs (325 mesh) being preferred. Skin eruptions may result from too frequent applications. Light applications of kerosene or fly spray have also been recommended, but it would be a tough skin indeed that could stand extended exposure to such a treatment. More recently a new product has appeared on the market which is reported to have shown up very well in test use by the Second Army in their recent Louisiana maneuvers. It is understood to have hydrogenated rotenone as its active ingredient. Applied to the ankles, wrists, legs and neck, it is reported in test applications to have reduced bites by 90 per cent.

TURNING to the broader field of louse control on farm animals such as chickens, horses, cattle, sheep, hogs, etc., the rotenone products encounter a longer list of competitive products which have become entrenched in the farm market through many years of government recommendation and farm use. In spite of this handicap rotenone dusts have made tremendous strides in this field over recent years, and the volume of present and potential business dwarfs the home consumption market.

DOG REPELLENTS

A review of the market for dog repellents, critical comments on some of the products now being offered for this purpose, and some suggestions on possible lines of experimentation in the development of new products in this field are included in an article scheduled for publication in the January issue of SOAP AND SANITARY CHEMICALS.

For control of lice on poultry the common treatments have been sodium fluoride, nicotine sulfate, tobacco dust, carbolated petrolatum, powdered sabadilla, naphthalene-sulfur compounds, etc. Sodium fluoride, although recommended in U.S. D.A. Farmer's Bulletin No. 1652, has the very obvious disadvantage of being extremely poisonous. Nicotine sulfate has the drawback of decomposing rapidly, as do nicotine-lime dust mixtures. Nicotine sulfate painted on chicken roosts has long been used, but in confined quarters the fumes are dangerous and quite commonly result in asphyxiating the poultry they are supposed to protect. The strong smelling naphthalene-sulfur preparations are less used today than they were ten or twenty ago. Sabadilla, too, is less used today for chicken louse control.

Pyrethrum and rotenone are the coming products in this market, either extended as dusts or in mixture with naphthalene. The same qualities that have brought rotenone to the fore in the home market for flea control apply equally well for louse control on farm animals. Sure kill and tendency to prevent reinfestation make it the preferred active ingredient. Rotenone content of dusting powders for louse control is commonly much lower than that necessary in flea powders,—in the neighborhood of one-half to one per cent for a farm louse powder. Considerable quantities of derris powder are also used on the farm in the form of a liquid application to guard against the warble fly,—the powder being mixed with water and soap.

There are at least seven different common species of lice infesting chickens, while other varieties are found on turkeys, ducks and guinea fowl. The two most important lice attacking chickens are the head louse (*Lipeurus heterographus*) and body louse (*Menopon biseriatum*).

There are three kinds of lice commonly found on cattle,—the short nosed cattle louse (*Haematopinus eurysternus*), the long nosed cattle louse (*Linognathus vituli*), and the common biting lice (*Trichodectes scalaris*). Only one louse commonly infests hogs (*Haematopinus suis*). There are at least five species of goat lice,—the two blue goat lice (*Linognathus stenopsis*) and (*L. africanus*), the yellow or hairy goat louse (*Bovicola penicellata*) and the two red goat lice (*Bovicola caprae* and *B. limbatus*).

For many years the standard method of controlling lice on cattle, goats, hogs, and other members of the farm population has been dipping. Arsenical dips, coal-tar-creosote dips and nicotine dips have all been widely used, although all have objectionable features. The arsenic dips present a serious poison danger, the coal tar dips frequently stain the hair and may leave it in bad condition, a particular disadvantage in control measures on sheep, and the nicotine dips are described by one authority as undependable below 0.07 per cent nicotine and dangerous at higher concentrations.

As alternatives to dipping, farmers have long used spraying and hand applications. For winter use, in weather too cold for dipping or spraying, farm bulletins of even 15 or 20 years ago recommended dusting of powders having naphthalene and pyrethrum as active ingredients. It has been the substitution of rotenone derivatives in some of these powders and the increased use of powders to replace dips over recent years that have been the real innovations in louse control on the farm.

MANILA GUMS...

The use of Manila Copals in bright drying floor waxes

By Robert W. Allan

American Gum Importers Assn.

THE term "Manila Copals" applies to those resins derived from the tree, *Agathis Alba*, found in tropical regions of the Far East.[8] Most of the Manila resin comes from the Dutch East Indies but it is called "Manila Copal" because of the fact that the Philippine Islands were the first to exploit this resin industry systematically and the resin used to be shipped from Manila. It is obtained, except for the now unimportant hard fossil type, from the tree by tapping, somewhat similar to the process used in obtaining rosin from pine trees.

Solubility in alkalies and the compatibility of these solutions with carnauba wax emulsions, imparting gloss, lower cost, and improved wetting properties, make the use of Manila resins useful in the manufacture of bright drying floor polish. The laboratory of the American Gum Importers Association has done extensive work on the use of Manila resins in floor products. This paper summarizes the work to date. It is intended to continue this work to include natural resins other than Manila. Compatibility data of these resins with various waxes have already been published.[1]

The Manila resins are soluble in alcohols, esters and ketones as well as in aqueous solutions of alkalies. The solutions in organic solvents produce very light colored coatings with excellent color retention. In addition, they may be plasticized with castor oil and most of the chemical plasticizers, such as dibutyl phthalate and tricresyl phosphate. The ready solubility of Manila resins in alcohols,[10] and the ease with which such solutions may be plasticized have resulted in their widespread use in paper coatings, traffic paints, and shellac substitutes.[9] They are completely compatible with ethyl cellulose and present interesting possibilities when used with this material, especially for paper coating applications.

Within the general classification of Manila resins there are five subdivisions, each being divisible farther into different grades, and each varying in solubility in alkalies. These subdivisions are: Macassar, Manila, Singapore Manila, Philippine Manila, Pontianak and Boea. Taking into consideration cost and solubility in alkalies, certain grades of Macassar Manilas are most applicable for bright drying floor polish formulations. The grades which have been used in this work are Manila DBB Chips and Loba C Nubs. However, it is not intended to limit the applicability of Manila resins to these two grades. Other grades may be used in the manner described for these two.

The bright drying floor polishes with which this work has been concerned are composed of mixtures of an aqueous resin solution and a carnauba wax emulsion in which the wax is finely dispersed. These are made separately of approximately the same solids content, and are then mixed in the desired proportions to give the final product. The work has been confined to carnauba wax emulsions but it is felt that polish manufacturers may use the present findings to use Manila resins successfully with other waxes.

The proportions of resin and wax which are being used at the present time vary over a wide range according to inquiries which have been received from polish manufacturers. The addition of an aqueous Manila resin solution, as previously stated, is desirable from the standpoint of increased gloss, lower cost, and improved wetting.

Inasmuch as the polishes consist of two separate parts, the methods for making these parts will be discussed separately. The first step under consideration will involve the manufacture of the resin solution and will be followed by a discussion of the wax emulsion. Combination of these two will then be considered.

Manila Resin Solutions

THE Manila resins as a class of the natural resins are characterized by their high acid numbers. The resins in themselves are insoluble in water but dissolve in aqueous solutions of inorganic and organic bases.

A great deal of flexibility is possible in methods used to dissolve these resins. The most important consideration is that there should be a sufficient amount of alkali present in the mixture. A small excess will do no harm while an insufficiency will yield extremely cloudy solutions or will incompletely dissolve the resin. In addition, the per cent solids content may be varied in either direction by varying the amount of water used.

Laboratory batches of solutions of Manila DBB and Loba C

were made using various alkalies according to the following formulae:

I.	240	grams Manila DBB or Loba C, ground
	22	grams NaOH
	1921	grams Water
II.	240	grams Manila DBB or Loba C, ground
	80	grams Ammonia (28 - 29% NH_3)
	1936	grams Water
III.	240	grams Manila DBB or Loba C, ground
	45	grams Monoethanolamine
	2090	grams Water
IV. (2)	240	grams Manila DBB or Loba C, ground
	96	grams Morpholine
	1276	grams Water
V.	240	grams Manila DBB or Loba C, ground
	80	grams 2-amino-2-methyl-1-propanol
	2346	grams Water

These solutions may all be made by dissolving the base in 700 grams of the water with agitation, adding the resin, and stirring until the resin dissolves. The remainder of the water is then added and the solution stirred to homogeneity There is always a small amount of insoluble residue which may be removed by straining.

The operation of dissolving the resin may be carried on at room temperature, but it is possible to accelerate the process by heating at a temperature of 50°-55°C. Whether room temperature or 50°-55°C. be used, the final solutions are somewhat cloudy, and are used as such in making the polish. However, excessive cloudiness may be caused by the lack of sufficient base to dissolve the resin. Each batch may be tested for this by taking a sample of the solution and adding to it a very small amount of the base. If an appreciable clarification of the solution results, more of the base should be stirred into the solution.

Clear solutions of the resin may be obtained by operating the dissolving process at still higher temperatures. For instance, 700 grams of the water plus the base and resin may be heated at 90°-95°C. for one-half hour. At this temperature the mixture is usually very cloudy. The remainder of the water is added and the solution is permitted to cool to room temperature. At this point the solution may be cloudy but if an additional small amount of the base is added, it will be found that a much less cloudy solution is obtained which may be practically completely clarified by filtration or settling. When high temperatures are used, evaporation losses should be compensated for by the addition of the necessary amount of water when the solution cools.

High temperature solution of the resin in a volatile base such as ammonia requires a little more caution than when a less volatile base is used. When the water, ammonia and resin are mixed and heated to 90°-95°C., ammonia is lost in sufficient quantities to cause precipitation of the resin unless additions of ammonia are made to compensate for the loss. When such precipitation occurs at high temperatures, the resin usually "balls up" and is difficult to redissolve. This difficulty is not encountered with the other bases used in the above formulae.

The choice of alkali to use to dissolve the resin depends upon various factors including cost, quality of product desired, effect on floor surfaces, etc. For instance, Solution I may be made cheaply and imparts hardness and gloss to carnauba wax emulsions; but objection has been found to its use because of its high alkalinity and the attending danger of attack on certain floor surfaces. Nevertheless, we have had reports of its successful use. It has a resinous odor which should not be objectionable and good color retention, i.e., it does not tend to darken on aging.

Resin solution II is probably the most popular of all the formula-

tions listed, similar formulations being found elsewhere in the literature (2) (3). However, although this solution imparts hardness and gloss to carnauba wax emulsions, objections have been raised to its highly ammoniacal odor and to the fact that it darkens on aging. In order to overcome these objections, the use of the less odorous amines to dissolve the resins was studied. These amines are represented in resin solutions III, IV, and V. However, it should by no means be construed that amines other than those listed cannot be used. It is known, for instance, that diethanolamine and triethanolamine will form soluble products with these resins in water. Others which may be tried are monomethylamine, monoethylamine, etc.

Of the three resin solutions in which amines have been used to dissolve the resin, number III, in which monoethanolamine is used, has received the most attention in this laboratory. This has been due principally to the fact that this is the cheapest of the three and because solutions IV and V have shown no advantage over it from the standpoint of gloss and hardness, contributed to the finished polish.

Solution III, although of higher cost than Solution II, has several advantages over the latter. Not the least of these is the difference in odor between the two. Whereas solution II has a very pungent ammoniacal odor, solution III has a mild resinous odor which would not be classified as being unpleasant. In the second place, solution III does not have as much of a tendency to darken on aging as does Solution II. Thirdly, solution III dries to a continuous, glossy, tough film while solution II dries to a discontinuous, brittle film of poor adhesion.

Solutions IV and V have not been used as extensively as has solution III because of reasons previously set forth. However, they are presented as a matter of interest and offer opportunities for further study.

Certain variations of the above resin solutions should also be considered. For instance, Solutions II and III were compared above and it was stated that number III had certain advantages over number II, although number II was the cheaper. A solution which is cheaper than number III but is intermediate in its properties between a solution made with ammonia and one made with monoethanolamine may be formulated by using a mixture of these two bases to dissolve the resin. One example of this is represented by the following formula: *Resin Solution VI.*

240 grams Manila DBB or Loba C, ground
30 grams Monoethanolamine
27 grams Ammonia
2046 grams Water

This solution is made in the manner previously described. It is one of an infinite number which may be made by dissolving the resin in a mixture of two, three or more different alkalies.

As far as the choice of resin is concerned, Manila DBB and Loba C. are the only ones which have been used in this work although it is believed that other grades of Loba as well as other Manila resins may be used. Of the above two, Loba C. gives solutions which are the lighter in color.

Carnauba Wax Emulsions

NO RADICAL changes are necessary in present carnauba wax emulsion formulae in order to use Manila resin solutions. As an example, the following carnauba wax formula is very similar to those appearing in the literature. (4). (6).

240 grams Carnauba Wax
40 grams Triethanolamine
27 grams Oleic acid
19 grams Borax
2391 grams Water

Melt the carnauba wax with the oleic acid and heat to 90°-95°C. Add the triethanolamine and stir for a few minutes. Dissolve the borax in 40 grams of boiling water, add to wax-soap mixture and stir for 2 minutes. Add 100 grams of boiling water and stir for 3-5 minutes, at the end of which time a transparent viscous mass should be obtained. Add the remainder of the water rapidly at the boiling point. Allow to cool to room temperature and add water to make up for evaporation losses.

Experiments with the object of reducing the triethanolamine content of the above emulsion and also with the object of obtaining better leveling and more homogeneous films led to the following formula: B.

240 grams Carnauba Wax
28 grams Triethanolamine
45 grams Linoleic acid
18 grams Borax
2412 grams Water

Melt the wax to 90°-95°C.

In a separate container, dissolve the triethanolamine in 200 grams water, stir at 90°C., and add the linoleic acid. Stir the mixture for five minutes at 85°-90°C. and then add the resulting cloudy viscous solution to the wax. Stir the wax-soap mixture at 90°-95°C. for 5 minutes.

Dissolve the borax in 50 grams of boiling water, add and stir until a hot drop off a spatula is clear (14-15 minutes). The remainder of the water is then added cautiously at a temperature of 95°-100°C. When the mixture starts to thin out, the addition of the water may be made more rapidly. Allow to cool to room temperature and add water to compensate for evaporation loss.

Emulsions with the best water resistance have been made using "Morpholine" as the emulsifying agent according to formulae given elsewhere. (3). (6). The literature should be consulted for other wax emulsion formulae. (2), (4), (5), (7). Additional emulsifying agents, such as monoethanolamine, diethanolamine, 2-amino-2-methyl-1-propanol, etc., may be used. The choice of the wax emulsion and emulsifying agent is left to the polish manufacturer.

Resin-Wax Mixtures

THE final polish products are made by mixing a Manila resin solution with a wax emulsion in the desired proportions. The following

remarks on this operation concern the use of resin solution III. It is our opinion that this solution will prove generally satisfactory for bright drying polish manufacture.

It is required that the finished polish dry to a glossy film without rubbing or buffing. Some factors affecting the gloss of such films are degree of dispersion of the wax, resin: wax ratio, film thickness, and clarity of film.

With regard to the first factor mentioned, it may be stated that a wax emulsion in which the wax is insufficiently dispersed is practically useless as far as bright drying properties are concerned. In addition, a resin solution added to such an emulsion cannot be expected to raise the gloss to an acceptable level.

Secondly, the resin: wax ration which is used is important as far as the gloss of the film is concerned. In general, the addition of the resin solution to the wax emulsion adds to the gloss of the film. Using the wax emulsion formulae given above and solution III, resin: wax ratios up to 50:50 have been used.

Film thickness is another factor involved in the amount of gloss obtained in the film. Film thickness in turn depends somewhat upon the percentage of solids in the polish. An increase in the solids content will usually increase the gloss of the film. The solids content may be varied, of course, by varying the amount of water in the polish formula.

The importance of clear films for best results as far as gloss is concerned cannot be over-emphasized. It is true that cloudy films may have a certain amount of surface gloss which make them acceptable for certain applications. However, if the maximum quality is to be obtained from a given resin-wax mixture, clear films must be obtained. Such films should be clear by both transmitted and reflected light. It is quite possible to obtain films which appear to be clear when light is passing through them perpendicularly but which are hazy when viewed from an angle. Clarity tests may be made by flowing the polish on a clean glass panel, permitting to dry, and observing the condition of the film after it has dried.

The clarity of the film obtained when solution III is mixed with a carnauba wax emulsion is dependent on the following: (a) ratio of resin to wax, (b) alkalinity of the wax emulsion, (c) period of time polish is used after mixture is made, (d) temperature of mixing, (e) the use of a protective colloid to improve compatibility.

(a) *Ratio of resin to wax*—It has been found that the clearest films are obtained at the higher resin: wax ratios. For instance, a film containing a resin to wax ratio of 50:50 will sometimes be clearer than one containing a resin: wax ratio of 20:80 provided the resin solution and wax emulsion have been mixed at room temperature. This does not mean that clear films cannot be obtained in a low resin: wax mixture. In this case, other treatment may be necessary.

(b) *Alkalinity of the wax emulsion*—In general, higher alkalinity leads to clearer films. The alkalinity of a wax emulsion may be raised by raising the borax content. However, this step is detrimental from the standpoint of the lower water resistance which results.

(c) *Period of time polish is used after mixture is made*—It was observed in some instances that clear films were not obtained immediately after the resin solution and wax emulsion were mixed at room temperature but that, after standing overnight, the polish was satisfactory as far as clarity of film is concerned.

(d) *Temperature of mixing*—When a relatively non-volatile amine, such as monoethanolamine, has been used to dissolve the resin, clearer solutions may at times be obtained by adding the resin solution to the wax emulsion while the latter is still hot and agitating the mixture at 85°-90°C. for about 10 minutes. The polish is then permitted to cool to room temperature. This has been used for relatively low resin: wax ratios, i.e., in the neighborhood of 20 resin solution: 80 wax emulsion. It should not be used for resin: wax ratios in the neighborhood of 50:50 because of the disruption of stability of these mixtures which occurs rapidly at high temperatures.

(e) *The use of a protective colloid to improve compatibility*—In all probability, many protective colloids may be used. However, in this work, the experiments have been conducted with a casein solution. For the purpose of obtaining clear films in Manila resin solution-wax emulsion mixtures, the casein solution has been used in only minor proportions and is incorporated in the wax emulsion before mixing with the Manila resin solution. Inasmuch as the casein solution is used in small amounts, it would perhaps be best to prepare it as a stock solution. It may be made according to the following formula:

500	grams Lactic Acid Casein
2360	grams Water
75	grams Borax
10	grams Pine oil
5	grams Phenol

The casein is soaked in 1900-2000 grams of the water at room temperature for one-half hour, with stirring. The mixture is then gradually heated. When the temperature reaches 52°-54°C., the borax, either as powder or in a water solution, is added. Heating is continued and the solution completed by holding the batch at 71°-76°C. for one-half hour while stirring constantly. Heat is removed, the phenol and pine oil are stirred into solution, and the remainder of the water is added. When cooled sufficiently, additional water is added to make up for evaporation losses. The solution is then permitted to cool to room temperature.

As stated previously, the casein solution is incorporated in the wax emulsion before the final mixture is made. The following proportions by weight of wax emulsion and casein solution have been used:

200	Carnauba wax emulsion
5	Casein solution

(*Turn to Page* 147)

People Are Smart

When your label reads, "This product has a Kenya pyrethrum base," it is to say to the consumer:

"This Insecticide Is Sure Death To Household Pests."

The public is becoming pyrethrum conscious. The public learns what is good!

KEN YA PYE

REG. U. S. PATENT OFFICE

(meaning KENYA PYRETHRUM)

NATURAL *SAFE* VEGETABLE INSECTICIDE

KENYA PYRETHRUM is rapidly becoming recognized as the most important general insecticide available not only killing all household pests but also for garden pests without danger to children or their pets.

KENYA PYRETHRUM RESEARCH is now demonstrating its increasing use for truck farms and orchards.

KENYA PYRETHRUM, increased production at present low prices, will take the place of many chemical ingredients formerly used because they were cheap, which are now becoming unobtainable as needed in the program of National Defense.

TELL YOUR TRADE that Kenya pyrethrum is the active ingredient of your Sprays and Dusting Powders—and watch your business grow.

KEEP YOUR TRADE BY GIVING THEM KEN YA PYE PROTECTION

PYRETHRUM ANALYSIS

A study of the Seil Method versus the Mercury Reduction Method for the Determination of Pyrethrins

By G. J. Hartz, P. A. Hendrickson and D. G. Hoyer
John Powell & Company

SINCE the Seil Method for pyrethrins determination was first published in the May, 1934 issue of SOAP, it has been used by the majority of insecticide chemists for the standardization of pyrethrum and products made therefrom. It is generally conceded that the Seil Method, like the others which are available to pyrethrum chemists, is not by any means the perfect answer to the problems of chemical pyrethrum standardization. Although it is not the purpose of this article to digress into the pros and cons of the reliability of any particular method, it must be stated that the popular usage of the Seil Method is due to its facility of application and its reproducibility of results, principally because the ever bothersome "human element" is kept down to a minimum.

In an effort to overcome the shortcomings of the Seil Method, the Mercury Reduction Method for the determination of pyrethrin I was evolved through the efforts of Graham,[1] Wilcoxon,[2] and Holaday.[3] In 1940 the Mercury Reduction Method[4] was adopted as the official method by the Association of Official Agricultural Chemists for the government.

The Mercury Reduction Method operates on an entirely different principle than does Seil's method for pyrethrin I. Seil bases his pyrethrin I determination on the separation of the monocarboxylic acid from the dicarboxylic acid by steam distillation and subsequent titration with N/50 NaOH. The Mercury Reduction Method,[4] on the other hand, depends on the reduction of Deniges' reagent by the monocarboxylic acid, precipitation of the reduced mercury as calomel, removal of unsaturated organic compounds with acetone and chloroform and determination of the reduced mercury by titration with iodate solution.

The monocarboxylic acid is separated from the dicarboxylic acid

TABLE I
GROUND PYRETHRUM FLOWERS

Lab. No.	*Pyrethrins %*	*Seil*	*Mercury*	*Mercury / Seil x 100 %*
3020	P. I	0.61	0.49	80.3
	P. II	0.59	0.59	100.0
	Total	1.20	1.08	90.0
3124	P. I	0.36	0.35	97.2
	P. II	0.38	0.37	97.4
	Total	0.74	0.72	97.3
3144	P. I	0.28	0.18	64.3
	P. II	0.25	0.25	100.0
	Total	0.53	0.43	81.1
3150	P. I	0.40	0.30	75.0
	P. II	0.41	0.41	100.0
	Total	0.81	0.71	87.6
3179	P. I	0.30	0.20	66.7
	P. II	0.32	0.32	100.0
	Total	0.62	0.52	83.8
3180	P. I	0.40	0.30	75.0
	P. II	0.41	0.41	100.0
	Total	0.81	0.71	87.6
3190	P. I	0.35	0.21	60.0
	P. II	0.31	0.31	100.0
	Total	0.66	0.52	78.8
3193	P. I	0.67	0.57	85.1
	P. II	0.68	0.68	100.0
	Total	1.35	1.25	92.6
3196	P. I	0.37	0.27	73.0
	P. II	0.34	0.34	100.0
	Total	0.71	0.61	85.9
3216	P. I	0.67	0.51	76.1
	P. II	0.75	0.75	100.0
	Total	1.42	1.26	88.7
3250	P. I	0.74	0.56	74.3
	P. II	0.78	0.78	100.0
	Total	1.52	1.34	88.2
3261	P. I	0.72	0.56	77.7
	P. II	0.73	0.72	98.6
	Total	1.45	1.28	88.3
3272	P. I	0.66	0.56	84.8
	P. II	0.63	0.63	100.0
	Total	1.29	1.19	92.2
3287	P. I	0.43	0.32	74.4
	P. II	0.54	0.53	98.1
	Total	0.97	0.85	88.8
3313	P. I	0.43	0.33	76.8
	P. II	0.51	0.51	100.0
	Total	0.94	0.84	89.3
3348	P. I	0.69	0.55	80.0
	P. II	0.78	0.78	100.0
	Total	1.47	1.33	90.5

When New and Better Containers and New Formulas are Adopted,

LEG PARALYSIS *Goes in Them!*

Another Whitmire customer, Skelly Oil Company scored a sensational first this year with their SLAZ-ALL Household Insecticide. The outstanding performance of this superior product packaged in a unique container provided the Insecticide Scoop for 1941.

You too can build an insecticide or cattle spray that stands out from the crowd! To the good qualities already present in your household spray add Dihydrolin (a hydrogenated rotenone compound) . . . increases your kill without slowing up your knockdown . . . combines leg paralysis with wing paralysis.

To your cattle spray or bedbug spray add Pralytex (Rotenoid Extract) . . . increases kill and repellency through permanent leg paralysis (moribund kill) from which flying or crawling insects never recover.

In the *veterinary* field this leg paralysis ingredient is used by the Cornbelt Laboratories, Inc., who have made available to the veterinary profession exclusively, products that control Dog Ticks, Lice and Fleas through permanent leg paralysis.

Add the potency of leg paralysis to your product—get full information by writing to

WHITMIRE RESEARCH CORPORATION

339 SOUTH VANDEVENTER · SAINT LOUIS · MISSOURI

WRC

Our products are stocked by Dodge & Olcott Company, 180 Varick Street, New York, for prompt delivery thru New England and Middle Atlantic States.

by extraction with petroleum ether, in which the free dicarboxylic acid is only slightly soluble. Under the conditions of the determination, the dicarboxylic acid reacts very slowly with Deniges' reagent so no appreciable error is believed to be introduced by the small amount present. By eliminating the steam distillation, it is believed by the developers of the Mercury Reduction Method that more accurate results for pyrethrin I are obtained. The Mercury Method was further designed to make a determination possible in combinations of pyrethrum and other toxics and essential oils where formerly an accurate analysis for pyrethrins could not be made.

The official method for the determination of pyrethrin II, used in conjunction with the Mercury Reduction Method, is virtually the same as originally designed by Seil.

In practical application for the control and standardization of pyrethrum extracts and powders, we and other commercial chemists have found that pyrethrin I as determined by the Mercury Reduction Method averages approximately 25 per cent lower than the Seil Method. The pyrethrin II results are reasonably close by the two procedures.

Thirty samples of ground pyrethrum flowers of various strengths and thirty samples of petroleum base pyrethrum extracts were each analyzed by the two methods, and the results are tabulated herewith in tables I and II. In table I, the analyses of ground pyrethrum are given in terms of per cent pyrethrins and in table II the results of the pyrethrum extracts are given in terms of grams per 100 cc. The last column headed by "Mercury-Seil X 100" shows the relative amount of pyrethrins found by the official method taking the Seil results as 100 per cent.

A SUMMARY of the above data involving 60 commercial samples shows that in Table I, dealing with ground pyrethrum flowers, the official method found only:

75.8 per cent as much pyrethrin I as the Seil test.

Lab. No.	*Pyrethrins %*	*Seil*	*Mercury*	*Mercury Seil x 100 %*
3349	P. I	0.35	0.25	71.4
	P. II	0.34	0.36	10.59
	Total	0.69	0.61	88.4
3353	P. I	0.49	0.37	75.5
	P. II	0.48	0.47	97.9
	Total	0.97	0.84	86.6
3387	P. I	0.37	0.27	73.0
	P. II	0.39	0.39	100.0
	Total	0.76	0.66	86.8
3401	P. I	0.67	0.52	77.6
	P. II	0.70	0.71	101.4
	Total	1.37	1.23	89.8
3410	P. I	0.66	0.50	75.8
	P. II	0.60	0.59	98.3
	Total	1.26	1.09	86.5
3442	P. I	0.34	0.26	76.5
	P. II	0.35	0.35	100.0
	Total	0.69	0.61	88.4
3448	P. I	0.48	0.35	72.9
	P. II	0.47	0.47	100.0
	Total	0.95	0.82	86.3
3450	P. I	0.60	0.46	76.7
	P. II	0.62	0.61	98.4
	Total	1.22	1.07	87.7
3495	P. I	0.41	0.28	68.3
	P. II	0.51	0.51	100.0
	Total	0.92	0.79	85.9
3549	P. I	0.26	0.19	73.1
	P. II	0.24	0.22	91.7
	Total	0.50	0.41	82.0
3564	P. I	0.37	0.28	75.7
	P. II	0.46	0.44	95.7
	Total	0.83	0.72	86.7
3757	P. I	0.36	0.29	80.6
	P. II	0.34	0.33	97.1
	Total	0.70	0.62	88.6
3764	P. I	0.37	0.28	75.7
	P. II	0.46	0.44	95.7
	Total	0.83	0.72	86.7
3775	P. I	0.39	0.31	79.5
	P. II	0.44	0.44	100.0
	Total	0.83	0.75	90.4

TABLE II
PYRETHRUM EXTRACTS

Lab. No.	*Pyrethrins*	*Seil Grams/100cc.*	*Mercury Grams/100cc.*	*Mercury Seil x 100 %*
3032	P. I	1.878	1.870	99.6
	P. II	1.993	1.993	100.0
	Total	3.871	3.863	99.8
3039	P. I	0.280	0.170	60.7
	P. II	0.311	0.360	115.8
	Total	0.591	0.530	89.7
3040	P. I	0.280	0.180	64.3
	P. II	0.350	0.330	94.3
	Total	0.630	0.510	81.0
3174	P. I	0.983	0.811	82.5
	P. II	0.995	0.975	98.0
	Total	1.978	1.786	90.3
3175	P. I	0.913	0.737	80.7
	P. II	1.075	1.055	98.1
	Total	1.988	1.792	90.1
3194	P. I	1.088	0.803	73.8
	P. II	1.184	1.184	100.0
	Total	2.272	1.987	87.5
3242	P. I	0.521	0.363	69.7
	P. II	0.827	0.810	97.9
	Total	1.348	1.173	87.1

99.2 per cent as much pyrethrin II as the Seil test.

87.7 per cent as much total pyrethrins as the Seil test.

Table II having to do with pyrethrum extracts in the usual petroleum oil base indicates very closely the same relationship. Here the official method found only:

73.5 per cent as much pyrethrin I as the Seil test.

98.6 per cent as much pyrethrin II as the Seil test.

86.9 per cent as much total pyrethrins as the Seil test.

In a series of tests involving a smaller number of samples of pyrethrum extracts, Dr. A. E. Badertscher of McCormick & Co., Baltimore, finds pyrethrin I values by the Mercury Method averaging 79.2 per cent of that by the Seil Method, although he states "when using the official method, the pyrethrin II value has a tendency to be a little higher than that found by the Seil Method." An examination of tables I and II demonstrates that in about 10 per cent of the instances we likewise found pyrethrin II by the official method to test slightly higher than that by the straight Seil.

Badertscher further reports the following comparative analyses on a sample of petroleum ether oleoresin No. PE206:

Pyrethrins Per Cent	*Seil*	*Mercury*
P. I	11.89	10.56
P. II	10.93	10.82
Total	22.82	21.38

Here the official method found:

88.71 per cent as much pyrethrin I as the Seil test.

98.90 per cent as much pyrethrin II as the Seil test, and

93.70 per cent as much total pyrethrins as the Seil test.

The fact that the average of results obtained by the official (Mercury Reduction) method for pyrethrin I is 26.5 per cent less than by the Seil Method and 13.1 per cent less for total pyrethrins is disturbing to the industry since by far the greatest tonnage of pyrethrum flowers imported into the United States today is paid for on the basis of the Seil test for quality, and, consequently, is sold to the trade on the same basis. Obviously, the two methods yielding vastly divergent results on identical samples cannot both be right. It is a challenge to pyrethrum chemists to determine which is closer to the truth. If neither method is correct, then a correct one must be developed.

Lab. No.	*Pyrethrins*	*Seil Grams/100cc.*	*Mercury Grams/100cc.*	*Mercury Seil x 100* %
3311	P. I	1.219	0.803	65.9
	P. II	1.141	1.141	100.0
	Total	2.360	1.944	82.4
3312	P. I	1.048	0.715	68.2
	P. II	1.043	1.043	100.0
	Total	2.091	1.758	84.1
3324	P. I	0.713	0.356	49.9
	P. II	0.777	0.771	99.2
	Total	1.490	1.127	75.6
3386	P. I	0.682	0.495	72.6
	P. II	0.626	0.582	93.0
	Total	1.308	1.077	82.3
3402	P. I	0.257	0.203	79.0
	P. II	0.263	0.244	92.8
	Total	0.520	0.447	86.0
3415	P. I	1.151	0.814	70.7
	P. II	1.043	1.041	99.8
	Total	2.194	1.855	84.5
3420	P. I	0.075	0.055	73.3
	P. II	0.075	0.072	96.0
	Total	0.150	0.127	84.7
3422	P. I	0.076	0.056	73.7
	P. II	0.078	0.076	97.4
	Total	0.154	0.132	85.7
3427	P. I	0.103	0.060	58.3
	P. II	0.136	0.139	102.2
	Total	0.239	0.199	83.3
3451	P. I	0.634	0.528	83.3
	P. II	0.561	0.561	100.0
	Total	1.195	1.089	91.1
3461	P. I	0.853	0.655	76.8
	P. II	0.832	0.801	96.3
	Total	1.685	1.456	86.4
3468	P. I	0.045	0.034	75.6
	P. II	0.026	0.026	100.0
	Total	0.071	0.060	84.5
3481	P. I	0.338	0.260	76.9
	P. II	0.344	0.319	92.7
	Total	0.682	0.579	84.9
3550	P. I	1.095	0.803	73.3
	P. II	0.907	0.794	87.5
	Total	2.002	1.597	79.8
3553	P. I	1.032	0.803	77.8
	P. II	0.907	0.885	97.6
	Total	1.939	1.688	87.1
3845	P. I	0.600	0.360	60.0
	P. II	0.950	0.940	98.9
	Total	1.550	1.300	83.9
3886	P. I	0.567	0.470	82.9
	P. II	0.955	1.013	106.1
	Total	1.522	1.483	97.4
3887	P. I	0.593	0.462	77.9
	P. II	0.987	0.966	97.9
	Total	1.580	1.428	90.4
3888	P. I	0.765	0.652	85.2
	P. II	1.304	1.305	100.1
	Total	2.069	1.957	94.6
3957	P. I	0.567	0.414	73.0
	P. II	0.895	0.872	97.4
	Total	1.462	1.286	88.0
3958	P. I	0.619	0.435	70.3
	P. II	0.907	0.896	98.8
	Total	1.526	1.331	87.2
3959	P. I	0.766	0.567	74.0
	P. II	1.270	1.282	100.9
	Total	2.036	1.849	90.8
3964	P. I	1.090	0.814	74.7
	P. II	0.987	0.973	98.6
	Total	2.077	1.787	86.0

References

[1]Graham, J. J. T., *Ind. Eng. Chem., Anal. Ed.*, 8, 222 (1936).

[2]Wilcoxon, Frank, Contrib. Boyce Thompson Inst., 8, No. 3, 175-81 (1936).

[3]Holaday, D. A., *Ind. Eng. Chem.*, 10, No. 1, 5 (1938).

[4]Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists, Fifth edition, 66 (1940).

Athlete's Foot . . .

a method for testing water soluble and water miscible fungicides used in the prevention of its spread

By E. G. KLARMANN, V. A. SHTERNOV and S. M. COSTIGAN*

Plaut Research Laboratory, Lehn & Fink Products Corp., Bloomfield, N. J., and Research and Development Department, Pennsylvania Salt Mfg. Co., Philadelphia.

TO DATE no method has been adopted for testing the fungicidal action of water-miscible and water-soluble products recommended or used for the prevention of the spread of athlete's foot.

In a study devoted to the investigation of the relationships between the chemical constitution and germicidal action of certain phenol derivatives, E. Klarmann, V. A. Shternov and L. W. Gates used a method of determining the fungicidal effect with respect to certain pathogenic fungi, the details of which have been described in a previous publication (1934). *Trichophyton rosaceum, Trichophyton gypseum, Achorion schönleinii and Monilia albicans* were grown in such a way as to yield a practically constant resistance to phenol which made them suitable for use as test-organisms in studying the fungicidal properties of a number of organic compounds.

This original method, as applied particularly with *Trichophyton rosaceum* as test-organism, has been giving consistently uniform results, not only in the hands of the authors but also in those of others who adopted it as a routine test for testing preparations recommended for the control of the spread of pathogenic fungi. At room temperature, phenol was found to kill *Trichophyton rosaceum* in dilutions of 1:70 to 1:80, in 10 minutes, while at 37°C. the dilutions ranged from 1:100 to 1:120 for the same period of exposure. Of the several pathogenic fungi used as test-organisms, *Trichophyton rosaceum* was found to be at least as resistant to the action of germicidal agents as other pathogenic fungi, and also the most easily cultured at a uniform resistance. Thus, the use of *Trichophyton rosaceum* as standard test-organism for testing fungicides is proposed, on the basis of the working hypothesis that if any preparation is effective against this fungus in a given concentration, it will be also effective in the same or in a lower concentration against other fungi of pathogenic significance.

COMMENTS WANTED . . .

The method for testing athlete's foot preparations published here is to be presented to the National Association of Insecticide & Disinfectant Manufacturers at its 28th annual meeting in New York on Dec. 1 and 2, for official approval and adoption at a later convention. Criticism and comment is desired from all manufacturers and other interested persons on this test method. Such comment should be sent to the Association office at 110 East 42nd St., New York.

As it was desired to change this method to conform more closely with practical conditions, variations of the original procedure were studied. This work has shown that one step, viz. the removing of the fungus growth from the agar slant prior to the preparation of a liquid suspension, could be eliminated, in that the fungus could be grown directly in a liquid medium. Also consistent phenol resistance could be obtained with a lower spore count than that yielded by the original procedure.

Details of the Proposed Method

The culture is a strain of *Trichophyton rosaceum* which, when tested by the method described below, is *killed by a* 1:70 *but not by a* 1:90 *dilution of phenol in* 10 *minutes.* The nutrient medium is a maltose-peptone broth containing 4 per cent of maltose and 1 per cent of peptone (Armour's special peptone for testing antiseptics and disinfectants according to the U. S. Dept. of Agriculture Circular No. 198); pH of the broth is adjusted to 5.6 to 5.8. The nutrient agar (for stock cultures) is made by adding 1.5 per cent of powdered agar to the broth of the composition stated.

The inoculum is prepared in the following manner: Glass beads 5 to 6 mm. in diameter are placed in 2-ounce flint glass bottles, to a height of about 2 to 3 cm. from the bottom. The broth described above is added carefully to fill all spaces be-

* Presented at the 57th annual meeting of The Association of Official Agricultural Chemists in Washington, D. C. (October, 1941).

TABLE 1 — Field Studies

INSTITUTIONS*	Number of Students	Fungi Colonies Per ml. — Foot pan, plain water capacity 4 gal.	Fungi Colonies Per ml. — Swabbing shower and locker room floors, 4 square inches swabbed, placed in 10 ml. sterile N saline
a. Vocational School (girls' department)	57	4	23†
	40	1	12
b. Senior High School (boys' department)	300	31	4
	300	20	3
c. Junior High School (girls' department)	157	2	2
	143	10	2
d. Junior High School, same as c (boys' department)	195	0	2
	180	12	3
e. Junior High School (girls' department)	113	5	3
f. Junior High School, same as e (boys' department)	170	18	29‡
g. Institution (girls)	25	3	24
	30	5	15
h. Institution (boys) same building as g	35	0	5
	70	21	5

* a, b, c, d, e, and f represent Philadelphia public schools; g and h represent the Philadelphia Central Y.M.C.A.

† 3 colonies of Trichophyton rosaceum—99.9 per cent of the fungi found in all tests were the common black and blue-green species.

‡ High—58 per ml.

tween the beads but not to cover them completely. The bottles are fitted with cotton plugs and sterilized in an autoclave, with the precautions required for autoclaving sugar media. After inoculation with the stock culture (from the agar slant), the bottles are placed in an incubator and kept at 28° C. for ten days. At the end of this period the cotton plugs are replaced by sterile rubber stoppers and the bottles shaken vigorously for 5 minutes. Then, 5 ml. of sterile saline are added and the bottles shaken again at this point for 5 minutes; finally, an additional 15 ml. of saline are added, the bottles shaken for 3 minutes, and the contents filtered through a 200-mesh monel metal sieve (U. S. Bureau of Standards No. 200). The screen may be soldered into a funnel shape or a disc may be cut which can be folded and fitted into a funnel, and the entire apparatus, viz. funnel, screen and flask wrapped together for sterilization. The suspension obtained by filtration is standardized, using the haemocytometer and counting pipette. The stock suspension should contain approximately 15,000,000 spores per milliliter; by a 1:10 dilution the standard inoculum is obtained containing 1,500,000 spores per ml.

As to the test itself, the *temperature of medication is* 20° *C.*, and the proportions are 0.5 ml. of the standard inoculum to 5 ml. of fungicide dilution. At *intervals of* 1, 5 *and* 10 *minutes*, a 4 mm. loopful of the organism-disinfectant mixture is inoculated into tubes containing 10 ml. of the maltose-peptone broth of the stated composition. The results are read after 10 *days of incubation at* 28° *C.*

The Disinfectant Scientific Committee of the National Association of Insecticide and Disinfectant Manufacturers proposed that *fungicidal solutions used for foot-baths should destroy the inoculating dosage in* 1 *minute; products used for general disinfecting purposes* (*on inanimate objects*) *should destroy this inoculum in* 10 *minutes.*

Practical Adequacy of the Spore Count

While the requirements as to the time period in which the fungicidal effect should take place are self-explanatory in view of the pertinent practical applications, reference should be made here to the adequacy of the specified spore count in the inoculum for the purposes of the test. In order to obtain an indication of the number of spores ordinarily encountered under practical conditions, a number of counts were made in water contained in foot pans. This was supplemented by spore counts obtained by swabbing the floors of shower and locker rooms in various schools and other institutions. The results given in table 1 indicate that the spore count of the inoculum of 1,500,000 spores is at least 5,000 times the number found in field studies herein reported. Thus a safety factor of an adequate magnitude appears to be provided for by this detail of the proposed method.

Applicability to Other Fungi

As indicated above, the method lends itself to the determination of the fungicidal action with respect to pathogenic fungi other than *Trichophyton rosaceum*. As a matter of record (and for possible reference) the phenol resistance of *Epidermophyton interdigitale* and *Epidermophyton gyseum* is expressed by the minimum fungicidal concentrations in 10 minutes of 1:80 at 20° C. and 1:120 at 37° C. for both organisms.

Note

It should be pointed out that the proposed method does not intend to provide a criterion of therapeutic efficacy of drugs recommended for the treatment of fungus infections, at least not without qualification. The seat of the fungus infection as well as the presence of complications which frequently accompany it, introduce variables which may not be taken care of adequately in all instances by this comparatively simple procedure. It is felt, however, that where the problem is one of prophylaxis, either by the prevention of the contamination of objects with pahogenic fungi, or by freeing contaminated matter of these microörganisms through disinfection, the method will provide an answer as to the fitness of any given product for such purpose.

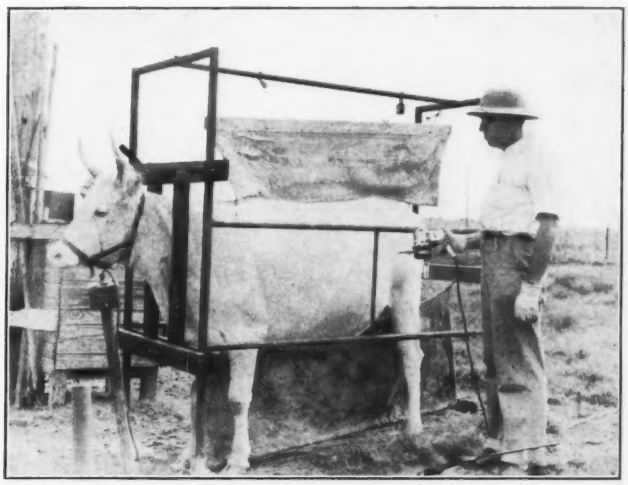
Summary

The paper describes a method for testing the fungicidal action of water-soluble or water-miscible preparations, intended particularly for prophylactic purposes (e. g., foot-baths) and for application to inanimate objects. *Trichophyton rosaceum* is used as the test organism. For the sake of uniformity of routine bac-

(*Turn to Page* 147)

Repellency in CATTLE SPRAYS

By T. H. Mailen and F. A. Fenton[1]
Oklahoma A. & M. College



describing a suggested method and apparatus for evaluating this important factor in cattle spray performance

FIELD tests are usually considered necessary to determine the repellency of a livestock spray. Various methods have been used in past investigations to evaluate livestock spray repellency and limitations have been noted in the several methods. An excellent review of the literature on this subject has been given by Doty,[2] who advocates the technique in which one half of a test cow is sprayed, while the other half is blanketed with canvas and used as a check. Some workers following Doty's method have sprayed both sides of an animal in testing one spray against a second spray, using a canvas blanket to shield the side not being sprayed. Other techniques, devised to test the repellency of livestock sprays to flies occurring on animals, have consisted in spraying the entire cow with the material to be tested, using a second unsprayed cow as a check. This method has also been used in group testing in which one or more groups of sprayed animals are checked against a group of equal numbers of unsprayed animals.[3] Because animal attractiveness to blood-sucking flies varies greatly in the breeds of cattle and in individual cows of a breed, and there are daily variations of the individual cow in attractiveness to blood-sucking flies, as described by the senior author,[4] the whole cow method of repellency testing was not used in these investigations.

Method of Repellency Testing

The procedure employed by the writers in the field repellency tests is a modification of Doty's one-half cow testing method in which one side of the test cow is sprayed with base oil alone and the other side with toxicants and/or repellents incorporated in that base oil; or one side of the test cow is sprayed with one livestock spray, while a second livestock spray is applied to the opposite side of the animal; or only one side is sprayed. After each cow is sprayed, each side with an equal volume of the materials being tested, it is staked out in the pasture on a 20-foot tether rope.

Apparatus Used in Spraying

Spraying equipment consists of a Vestal automatic electric sprayer to which is attached a shell vial in which a measured amount of spray material is placed. The spraying is done in a field stall, 6 feet x 6 feet x 2½ feet in dimensions (Fig. I), constructed of welded pipe. At one end of this stall is a wooden stanchion. From the ridgepole, a canvas 30 inches wide and 6 feet long, is suspended by pulleys and rope and is weighted by short pieces of pipe so that the bottom of the canvas curtain will fit the contours of the animal's back. This canvas can be raised or lowered to fit a cow of any size. A

[1]The technique described herein was developed by the authors during the years 1940 and 1941 while conducting investigations on livestock sprays under a cooperative research fellowship between the Department of Entomology, Oklahoma A. & M. College, and Continental Oil Company.

[2]Doty, A. E. 1936. Cattle Spray Tests. *Soap and Sanitary Chemicals* 12 (4) pp. 97, 99, 101, 103.

[3]A detailed report on cattle spray testing by Frank C. Nelson in *Soap and Sanitary Chemicals* 17 (8) p. 92.

[4]Mailen, T. H. 1941. Seasonal Occurrence and the Effect of Host Attractiveness on the Abundance of Stable Flies and Horn Flies on Cattle, *Proc, Okla, Acad, Sci.*, Vol. 21, p. 19.

second piece of canvas is attached to a rope and is weighted at the bottom with a 6-foot pipe. The rope is fastened at one end and allowed to remain slack while the cow enters the stall. After the cow's head is locked in, a bar is dropped across the back of the stall and the rope is drawn taut between the cow's legs. The upper canvas is then dropped to the animal's back and an effective screen is made. This apparatus, together with a canvas windbreak, eliminates the carry-over of spray mist from one test side to the other. This screen has an advantage over the canvas blanket type of shield in that it does not touch the cow's side and so does not disturb the spray that has been applied. Furthermore the lower canvas effectively shields the legs which is not done in using the canvas blanket. This is important in testing repellency by the one-half cow method since the animal's legs are a favored position for stable fly feeding.

Evaluation of Data

In order to assign a definite value to the percentage of repellency of a cattle spray when tested against the unsprayed side of an animal, the following formula is used:

x = the total observational fly population on both sides of the test animal.

$x/2$ = the theoretical fly population on each side of the test animal if no repellent factor were present.

y = the fly population on that side of the test animal having fewer flies.

$x/2\text{-}y$ = the number of flies repelled.

$\frac{x/2\text{-}y}{x/2} \times 100$ = the percentage of repellency.

It is realized that this formula has its limitations. It is based on the idea that all repelled flies move to the opposite or unsprayed side of the animal which is of course not true. However, over a period of observations on a group of closely tethered animals the fly population present tends to settle on the unsprayed sides of the animals in proportion to the repelling effect of the spray being tested. In comparing two repellent fly sprays the formula does not give a true picture of the repellency of the sprays since the total fly population is not known. This, however, could be determined by releasing a known number of flies in a cage within which the test cow is tethered. In the field when comparing two repellent materials, the formula can be used to evaluate their comparative efficiency in repelling flies.

Summary

The one-half cow method of repellency testing is considered by the authors to be the most effiicent method to determine the repellency of livestock sprays in field testing since it eliminates the factor of variation in animal attractiveness to blood-sucking flies.

The apparatus described forms an effective shield to prevent carry-over of spray mist between the two test sides. This apparatus does not rub off the spray material as does a blanket type of shield. Furthermore, it does not transmit spray materials used on cows in one test to other cows sprayed in subsequent tests with different spray materials.

The formula given provides a means of evaluating two sprays in the one-half cow method of repellency testing by assigning a percentage of increased repellency of one spray over a second spray; or an evaluation of the total repellency of one spray over an unsprayed cow side.

Limitations entering into the one-half cow method of repellency testing are: the cow's position in regard to the prevailing wind, and its effect on the distribution of the fly population on the animal; the possibility of carry-over of the repellent factor by the wind or other means and its influence on the comparative number of flies occurring on the test sides. These factors, however, tend to be canceled in several days' testing of like materials.

◆

Purified Pyrethrum Extract

Purified pyrethrum extracts free from resins are obtained by extracting the pyrethrins by means of appropriate volatile organic solvents, cooling the extract at a temperature below room temperature, preferably below 0°C., and separating the resins and other precipitated inert materials from the solution by centrifuging. Organic compounds favoring the precipitation of inert materials include diisopropyl ether, secondary dibutyl ether or other aliphatic ethers, glycol or its derivatives, and the hydrogenation products of naphthalene such as decalin. N. V. de Bataafsche Petroleum Maatschappij. French Patent No. 846,982; through *Chem. Abs.*

◆

New Jap. Beetle Repellents

Tetramethylthiuram has been found highly effective for repelling Japanese beetles, it was reported by Dr. W. S. Tisdale, director, and Dr. A. L. Flenner, chemist, of the pest control laboratory of E. I. du Pont de Nemours & Co., **Wilmington, Del.,** in a paper presented before the recent American Chemical Society meeting at Atlantic City, N. J. Ferric dimethyl dithiocarbamate was found to be of equal value, it was reported, while other derivatives of dithiocarbamic acid were said to be effective in the control of insect pests and fungi. None are stomach poisons; many are contact poisons. Contact with Japanese beetles paralyzes the mouth parts and forelegs.

◆

Thallium Sulfate in Rat Control

Tests with thallium-poisoned and unpoisoned oats indicated that an appreciable number of the rat population can become educated by comparisons and can thereafter detect accurately for an indefinite period, even the tasteless thallium poison. Thallium sulfate was definitely superior to barium carbonate as a rat poison to be added to rolled oats in the pre-bait method; it was more than twice as acceptable as barium carbonate under the conditions of the test. Rolled oats that had been treated with powdered red squill was far less acceptable to rats than thallium-treated oats, and red squill was a failure in controlling rats under field conditions. R. E. Doty. Printed Reports Ann. Meeting Hawaiian Sugar Planters' assoc., Rept. Comm. in Charge Expt. Sta. **60,** 92.4.

Sanitary Supply Manufacturers Exhibit at N. Y. Hotel Show

EXHIBITS of cleaning products, insecticides, disinfectants, soaps, and floor maintenance products were much in evidence at the 26th annual National Hotel Exposition, held at New York's Grand Central Palace, November 10 through 14. Some 11 companies in the sanitary supplies field were represented at the show, which occupied three floors of Grand Central Palace and was visited by 65,000 hotel men. Among the more than 300 exhibitors were:

J. B. Ford Sales Co., Wyandotte, Mich. A moving display emphasizing economies effected through the use of "Wyandotte" products, displays of "Neosuds," new soapless glass washing compound, and meters for indicating the strength of dishwashing solutions of "Keego," "C.W." and alkalies were features of the Ford booth. In charge was A. J. Bettelheim, New York district manager, aided by J. P. Pryor, J. J. L'Ecuyer, G. D. Caffrey, W. C. Dawkins, A. E. Nelson, J. F. Brady, L. S. Higginbotham, J. Hickson, J. Mannes, M. F. Boucher, Jack Rhodes, and O. J. Roth.

Franklin Research Co., Philadelphia, A. Y. Lightcap, sales representative of the company from the Philadelphia office, was in charge of the booth of Franklin Research Co. where educational exhibits of testing equipment for floor products formed the main part of the company's display. "Chekit" and "Rubber Gloss" products for floor maintenance were shown.

Kwik Products Co., New York. Demonstrations of "Kwik-Dry Cleaner" for rugs and upholstery, using a special foam-dispensing brush, product of the company, and a display of "Kwik Wall Cleaner," "Kwik Kill Insecticide," and other cleaning products newly packaged in red, white and blue, were features of the Kwik booth, in charge of R. G. Dill, president, and H. C. Marsh, vice-president. Also in attendance were M. E. Neuburger, and Leo Stiefel.

R. M. Hollingshead Corp., Camden, N. J. The full line of "Whiz" industrial maintenance products, manufactured by the Hollingshead company, was shown at this company's exhibit, in charge of William F. Plowfield, director of sales. Others in attendance at the booth were Frank E. Griffiths, C. A. Sullivan, and Florence M. Reessing.

Long Island Soap Co., Brooklyn. The company's full line of soaps, laundry compounds, and cleaning supplies were on display at the Lisco booth. Alexander Baar, treasurer, and George Steiner, sales manager, in charge of the exhibit, were assisted by Miss Homar of the export department. Mr. Steiner advised hotel men to stock up on dishwashing compounds in preparation for possible shortages in the near future.

Odosin Corp., New York. Two new products, "Odolure Safety Roach Run" and "Odolure Sanitary Fly Trap," were on display as well as "Odosin Odorless Insecticide," and the Odosin diffusor. Display was in charge of Alex Weil, president, and E. Robinot. The company's new fly trap is not yet on the market but will be brought out in the Spring, it was announced by Mr. Weil.

John T. Stanley Co., New York. Demonstrations of "Silver-Wash" silver burnishing soap, and "Dairi-San" glass washing compound were feature items of the attractive Stanley booth, in charge of J. W. Stanley, vice-president, J. T. Stanley, secretary, F. A. Cook, institutional manager, and J. Hosey, credit manager. Novelty soap dolls were given away as favors.

Superior Chemical Products, Inc., Philadelphia. Fly raising cages filled with countless flies for demonstrations of the killing power of "Omnicide" were prominently displayed at the Superior booth. The company's line of detergents, floor waxes and other sanitary supplies were also on display. In charge were E. A. Mackay, president of Superior Chemical Products Sales Corp., New York, and W. F. Gordon, president of the Philadelphia company, assisted by J. Curran, F. Gillman, D. Blank, J. Treadwell, J. Becker and P. Cameron, sales representatives. This was Superior's first year at the hotel show.

System Products Co., Chicago. The "Kleen-Rite" line of rug cleaning products was on display at this booth, in charge of C. F. King, general sales manager for the eastern territory; C. Widden and B. J. Ernstein, from the Chicago office.

Tanglefoot Co., Grand Rapids, Mich. The Tanglefoot diffusor for "Difuso" insecticide, "Tree Tanglefoot" and "Tanglefoot" fly paper, principal insecticide items of the company's recently streamlined line of products were shown at this booth by A. G. Russell, New York sales representative; A. Knecht, export manager; R. Y. Cutler, president; B. D. Bradford, G. A. Bradford, Ray Pethick, and J. F. Stock, representatives. This was the company's initial showing at the Hotel Exposition.

West Disinfecting Co., Long Island City, N. Y. The West line of sanitary supplies, including "Lan-O-Kleen" powdered soap, soap dispensers, "Showersan," "Westamine" and "Teramine" odorless disinfectants, the West "Sanitor" vaporizer, and "Rodite" red squill prepared bait for rats and mice, was shown by J. A. Matinka, service manager; John Marcuse, vice-president; E. H. Frawley and Max Osterman.

———♦———

The addition of certain red mineral pigments in finely divided form to rotenone and its derivatives such as dihydrorotenone, protects the latter against the action of light. A suitable red pigment is the residue from alumina preparation known as "red sludge." Motte and Pomot. French Patent No. 848,974; through *Chem. Abs.*

NEWS...

Bluefield Opens Roanoke Branch

Bluefield Chemical Co., sanitation products, Bluefield, W. Va., opened a branch at Roanoke, Va., November 10. The new branch, known as Roanoke Janitor Products Co., is in the Rush Building, 11 Franklin Road.

Gordon Manufacturers Move

Gordon Manufacturers, New Orleans, have just moved into a new plant at 340 S. Diamond St., it is announced by J. Patrick Gordon, proprietor of the company. Former address was 1123 Philip St. The new plant is a three-story brick building. Products of the company are "Sanus" dish-washing compound, detergents, disinfectants, floor waxes, liquid cleaners and powdered cleaners.

Schlierer Joins Midland Chem.

Harry J. Schlierer has just been appointed eastern representative for Midland Chemical Laboratories, Dubuque, Iowa, maintenance materials. Mr. Schlierer was associated with American Type Founders, Elizabeth, N. J., for 25 years.

U. S. Bur. Entomology Appoints

The appointments of Dr. Fred C. Bishopp as assistant chief of the U. S. Bureau of Entomology and Plant Quarantine, in charge of research work, and Frank H. Spencer as assistant chief in charge of business affairs, were announced last month by Dr. P. N. Annand, chief of the Bureau, U. S. Department of Agriculture. Avery S. Hoyt will continue as associate chief and S. A. Rohwer as assistant chief. Dr. Bishopp joined the Federal Bureau of Entomology in 1910, and was made chief of the division of insects affecting man and animals in 1927, which position he held until the present appointment. Mr. Spencer joined the Government service in 1917, and after holding numerous positions became business manager of the Bureau of Entomology in 1931.

Re-Elect Dr. R. C. White

Dr. Robert C. White, president, Robert C. White Co., Philadelphia, and long prominently identified with activities of the National Association of Insecticide & Disinfectant Manufacturers, was the sole victorious Democratic candidate in the recent municipal elections in that solidly Republican city. Dr. White was re-elected City Comptroller by a margin of 4,000 votes.

DR. ROBERT C. WHITE

Self-Sterilizing Glasses

Development of a black silver compound, which when applied to cups, glasses, bottle caps, bathroom fixtures, telephone mouthpieces and other possible germ carriers makes them self-sterilizing, was announced last month by Dr. Alexander Goetz, a physicist, in a talk at the California Institute of Technology, Pasadena. Dr. Goetz exhibited a plastic drinking cup, the top of which was ringed with the silver compound. Germs are killed by the compound within a minute after contact, Dr. Goetz said, thus eliminating the transmission of diseases through utensils in public eating places. He put the cost of a sterilizing ring around the top of a glass or cup at a tenth of a cent and said that under ordinary use it would last as long as China, plastic, or glass.

Cyanide Death Award $28,000

A $28,696 judgment was recently granted to the English widow of a seaman killed in 1937 during a cyanide fumigation. U. S. Commissioner Norman J. Griffin, master in admiralty for the Federal Court, announced the award to Mrs. Louisa Pont, Liverpool, England, last month. Ramon Pont, died aboard the freighter *Quaker City*, owned by a Boston company, in 1937.

Economic Entomologists to Meet

The 54th meeting of the American Association of Economic Entomologists will be held at the St. Francis Hotel, San Francisco, December 29 to January 1. Joint sessions with the Entomological Society of America are to be held during the course of the meeting. Program for the meeting is in the hands of a committee of three: D. L. Van Dine, chairman, of Washington, D. C.; L. S. McLaine, Ottawa; and D. B. Mackie, Sacramento. Exhibits are to be under the direction of Dr. A. E. Michelbacher, University of California, Berkeley. Dr. G. F. MacLeod, entomologist,, University of California Experiment Station, is the local committee chairman. A feature of the four-day session is to be a circle tour of the San Francisco Bay region, visiting such places as the University of California's division of Entomology and Parasitology, and the Vallejo Navy Yard.

New Papers Prone to Stain

Wall papers now coming on the market appear to be more susceptible to staining by liquid insecticides, according to a bulletin released last month by the National Pest Control Association. This is said to apply to many of the new papers coming from the best paper mills as well as to cheap wall papers.

McCormick Sec.-Treas. Dies

William Lee Bean, secretary-treasurer of McCormick & Co., Baltimore, died November 9 after an illness of four months. He was sixty-eight years old and had been with the McCormick firm only a few months short of fifty years. Mr. Bean was born in Baltimore and made his home there most of his life. In 1892, he joined the McCormick organization, which was a small business at that time. When the company was incorporated in 1915, Mr. Bean was made secretary-treasurer and served in that position until his death.

Shortages Force Catalog Change

A number of sanitary products manufacturers have made extensive revisions in their catalogs over recent months in view of shortages of many essential raw materials. They emphasize quite commonly that all items are offered subject to their ability to obtain necessary raw materials and that no guarantee of prices can be made. One recently revised price list warns prospective buyers that no rush orders can be accepted, nor are they in position to book future orders for delivery beyond thirty days from date of order. The general trend seems to be away from promising definite delivery dates. Customers are also being advised in some cases to eliminate instructions to ship certain items in their order with others, as this may further delay delivery. Most shippers reserve the right to subdivide orders into separate units to expedite shipment, unless orders are specifically marked "Do not divide."

Baldwin in New Business

H. W. Baldwin, founder and former executive vice-president of Baldwin Laboratories, Inc., Saegertown, Pa., has just gone into business as H. W. Baldwin, manufacturer of "Spa" insecticides and sweeping compounds, same city. Products manufactured by the company include pyrethrum base "Spa" household insect killer and industrial killer. About five months ago, Mr. Baldwin disposed of his holdings in Baldwin Laboratories, Inc., so that he could enter into his privately-owned business. The "Dwin" insecticide division of Baldwin Laboratories was sold to A. S. Boyle Co., Jersey City, in August.

Tells Story of Watkins Co.

J. R. Watkins Co., Winona, Minn., is the subject of a feature article in the latest issue of the *Phoenix Flame*, house magazine of Phoenix Metal Cap Co., Chicago. Entitled "Growth and Success of J. R. Watkins Co.," the article tells of the founding of the company by young J. R. Watkins in 1868, when he began selling a general-purpose liniment, made in his own home. Today, the story discloses, the liniment made by the original formula of the company's founder is the largest seller of the three hundred products in the Watkins line. Approximately 15,000 dealers now sell Watkins products directly to the home—the method originated by J. R. Watkins. Included in the article is a description of the experimental farm conducted by the company for the purpose of testing its line of farm products such as insecticides, disinfectants, and mineralized tonics for cattle, hogs and poultry.

Clarify Colo. Insecticide Act

Clarification of the new Colorado "Insecticide Act", for the benefit of firms who have had difficulty in registering some of their products in that state, is contained in a letter addressed to the National Association of Insecticide & Disinfectant Manufacturers, by Lorin Anderson, deputy entomologist, division of agriculture, State of Colorado. We quote in part as follows:

> Colorado's law requires that the standard of quality shall be expressed and shall be construed to mean either a statement of the name and percentage of each active ingredient with a total of inert, or in lieu thereof, a statement of the name and percentage of each inert ingredient.
>
> Recent rulings have permitted us to assume that, if a label bears no statement of the ingredients, there are no inert ingredients in the material. This assumption, of course, must be substantiated by a detailed statement of analysis of the product to appear on the application form."

Phenol versus Formaldehyde

The bacteriostatic action of formaldehyde is superior to that of phenol, but is considerably slower. The temperature best adapted for tests is 18° C. Formaldehyde is much less affected by the obstructing ac-

Skelly Oil Co. of Kansas City have recently adopted a new container and accompanying sprayer for their "Slaz-All" liquid household insecticide. Instead of being closed with the usual cap, the can is hermetically sealed to completely eliminate the possibility of evaporation. When ready for use the special seal is easily punctured by inserting the gun spout. The sprayer is locked to the can by a simple quarter turn. The insecticide is made and packaged for Skelly by Whitmire Research Corp., St. Louis.

tion of organic compounds than phenol. Formaldehyde also reacts less to variations of concentration and temperature. Its dilution coefficient is about 1 at 18-20° C., while that of phenol is 6.5. R. Canganella. *Ann. igiene* 1939, 573-96; through *Chem. Abs.*

◆

Offer New "O-Cedar" Polish

O-Cedar Corp. introduced their new "O-Cedar No-Rubbing" furniture cream polish to Chicago housewives last month through large newspaper display advertisements which featured the offer of a 15-cent bottle of "O-Cedar" upholstery and rug cleaner free with each purchase of a 49-cent bottle of the polish. Distribution was made through regular dealer outlets.

◆

McCloud on Rat Control

Walter S. McCloud, W. B. McCloud & Co., Chicago, and former president of the National Pest Control Association, spoke recently before a civic meeting introducing Chicago's "Rat Control Week," October 24 to 31. The campaign, through mass-meetings, door-to-door calls and newspaper publicity, was of an educational nature calculated to make Chicago rat-conscious. Mr. McCloud declared that the project had the endorsement of the pest control industry, and that his own organization, as well as other Chicago operators, had benefitted directly from the drive. He criticized homemade attempts at solving the rat nuisance, adding, "No one but a professional exterminator can efficiently, economically and thoroughly get rid of the rat menace."

◆

Stops "May's Bug Dust" Claims

Earl E. May Seed Co., Shenandoah, Iowa, recently entered into an agreement with the Federal Trade Commission to cease representing that its insecticide "Earl May's Bug Dust" is an effective repellent of cut worms, has a repellent effect against mice or ground squirrels, is a germ killer, combats strawberry weevil, or contains sufficient pyrethrum to be effective in combatting flies and other insects.

Dead Shot Twyman

Over 300 partridges and 8 rabbits, plus a man and his dog,—all after a hunting expedition in

the Argentine. The gentleman on the right is none other than Pat Twyman,—known also as E. B. Twyman,—president of John Powell y Cia., Buenos Aires, subsidiary of John Powell & Co., New York. Assisting Senor Twyman in this assault on the partridge supply of the Argentine was J. Scalabrini, also of the same firm. Mr. Twyman is at present on a visit to the offices of John Powell & Co. in New York.

◆

Rotenone and Rotenoids

An excellent and encyclopaedic study of rotenone and the rotenone-bearing roots appears in the October issue of the *Journal of Economic Entomology*, published by the American Association of Economic Entomologists, Menasha, Wisc. R. C. Roark, bureau of entomology and plant quarantine, U. S. Department of Agriculture, author of the article, which is entitled "Present Status of Rotenone and Rotenoids," discusses the rotenone-bearing plants from a number of different angles, including importation, cultivation, pharmacology, use as insecticides, ways of using as insecticides, insect pests of derris, cube and tephrosia, and the chemistry of cube, derris, timbo and tephrosia.

◆

New Jersey PCO's Meet

John Medoff, local secretary Murray Breecher, and national secretary William O. Buettner, were speakers at the recent regular monthly meeting of the New Jersey Pest Control Association held at the Hotel Douglas, Newark, N. J., November 18. Legislation at Hoboken, N. J., which was unfavorable to PCO's was discussed and a committee was appointed to appear before the Hoboken officials seeking changes in phraseology.

◆

Ky. Reports High Soap Costs

The value of soaps, insecticides and disinfectants purchased by the state of Kentucky was said to be much less than the price paid for them in a chemist's report to the governor's purchasing investigation committee, November 17. The report was based on analyses of samples taken from state institution supplies. It placed the following values: concentrated soap, bought at 50 cents a pound, said to be worth 12 cents; scrubbing compound, bought at $1 a gallon, said to be worth 20 to 35 cents a gallon; disinfectant, bought at $3.75 a gallon, said to be worth $1 a gallon in large lots; insecticide, bought at $15 a gallon, said to be worth $5; another insecticide, bought at $4 a gallon, said to be worth less than $1. The results of the analyses were challenged by State Finance Commissioner J. D. Talbott, who declared that it was "not fair" to judge the preparations on such reports, which, he added, on their face "looked bad."

◆

Discusses Spray Residues

The "Problem of Insecticide Spray Residue" is discussed by Alvin J. Cox, chief of the bureau of chemistry, California Department of Agriculture, in an article in the November issue of the *American Journal of Public Health*. Dr. Cox outlines the legal aspects of insecticide spray residues on fruits and vegetables, mentioning legal tolerances and penalties for violation of the law. The possibilities of acute poisoning are slight, Dr. Cox says, but the obscure chronic effects resulting from years of continued ingestion of minute quantities of lead, arsenic or fluorine is the menace at which government spray residue regulations are directed.

To quote from the article "It has *not* been shown that any substance that is toxic to insects is

wholly non-toxic to man, so that any spray or dust residue, even though reputedly non-toxic to man, should be fairly well removed from produce before it is marketed." He says further "Present tolerances include only inorganic substances but some organics may hold distinct dangers." Dr. Cox concludes his article with a plea for conservatism on the part of public health officials in attributing illness to spray residues, "for otherwise innocent farmers may be economically injured from failure to sell their produce on account of unfounded suspicion." In support of this plea he gives examples of cases where losses of markets occurred through unfounded reports attributing illnesses to vegetable spray residues, where actually, as it was discovered later, the illnesses were due to spoiled food and had nothing to do with the insecticide spray residue.

Exhibit at P.A. Show

Several sanitary chemical concerns were represented at the annual trade show of the Chicago Purchasing Agents Association Nov. 12 and 13. Pesticide Co., Chicago, displayed a line of insecticide sprays and powders, disinfectants, deodorants, cleaners and other products for industrial and institutional use. H. C. Kaufman, company purchasing agent, was in charge, assisted by Miss M. E. Rolnik.

U. S. Sanitary Specialties had an exhibit of their liquid soaps, heavy duty mechanics' soap powder, surgical soaps, disinfectants, cleaning compounds, waxes, seals and other items. Also shown and demonstrated was their system of soap dispensing equipment for factories and public institutions. George Simmonds, company president, was in charge, assisted by John Clark, sales manager, and I. I. Woods of the Chicago sales staff.

Oakite Products, Inc., New York, exhibited their varied line of industrial cleaning compounds. Included were many new items recently developed by the company's research staff to meet the peculiar cleaning and maintenance problems of plastics, alloy metals and other modern construction materials. J. C. Leonard, Chicago divisional manager, was on hand, assisted by eight members of his sales staff. The Sanitary Institute of America, Inc., also occupied a booth with E. D. Szold, executive secretary in charge.

New Officers Salesmen's Assn.

Carl O. Lind, Dow Chemical Co., was recently named new president of the Salesmen's Association of the American Chemical Industry, New York, for the 1942 term. Other officers named for the coming year are as follows: Gerald S. Furman, Merck & Co., vice-president; John J. Butler, Jr., West Virginia Pulp & Paper Co., treasurer; and Phil LoBue, Michigan Chemical Co., secretary. New executive committee members to serve for three year terms are Frank Fanning, N. I. Malmstrom & Co., and J. P. Remensynder, Heyden Chemical Corp. Formal induction of the officers will take place in January.

CARL O. LIND

Cleveland PCO's Meet

A meeting of the Cleveland Pest Control Operators was held at the Hotel Statler, November 11. Secretary W. O. Buettner, of the national association, speaking at the meeting, reviewed the events of the ninth annual N.P.C.A. convention held at San Francisco. Other speakers at the meeting were Walter Dykstra and George Dyar, of the predator and rodent control division of the fish and wildlife service, U. S. Department of the Interior.

Survey Indicates NaF Needs

Nearly 84,000 pounds of sodium fluoride will be needed each month for the next six months by the pest control industry, according to a conservative estimate made by the National Pest Control Association, Brooklyn. This estimate is based on results of a questionnaire recently submitted to the trade by the association. Out of 380 firms to whom the "informational statistics" forms were sent, 147 filled in and returned them. A compilation (as of October 18) showed that the 147 responding firms will require 709,914 pounds of sodium fluoride during the coming year. It also showed that stocks on hand held by the 147 firms totaled 81,365 pounds. The estimates for the entire industry, which includes between 1,200 and 1,600 firms (of which about 800 are too small to affect the total appreciably as far as sodium fluoride use is concerned) was based on the above results.

Other chemicals beside sodium fluoride which PCO's are finding difficulty in getting, include thallium sulfate, ethylene dichloride, paradichlorobenzene and all other materials with a chlorine content. Red squill shipments now being received are low in toxicity, according to the NPCA.

As a result of its survey of the industry, the NPCA, through the cooperation of the OPM, opened up a source of sodium silico fluoride. Although this material is distinctly inferior to sodium fluoride as a pesticide, it was offered to ameliorate the sodium fluoride situation. In the New York metropolitan area, 46 firms (all those who filled out questionnaires in the area) were offered limited supplies of sodium silico fluoride, and just recently supplies of sodium fluoride were opened up slightly. However, the situation is still tight and no real let-up is in sight. In the Mid-West, the situation is said to be easier than in the New York area. The sodium fluoride shortage is tied up, in part, with the defense needs for hydrofluoric acid in the production of aviation gasoline, stainless steel, metallurgical fluxes, and mate-

rials important in the purification of magnesium and aluminum. Another factor behind the sodium fluoride shortage is that European supplies have been cut off. The chemical section of the OPM is now attempting to increase the production of both hydrofluoric acid and sodium fluoride. It is hoped that new plants will go into production in the near future.

Hold Anderson-Prichard Meeting

The annual technical sales meeting of Anderson-Prichard Oil Corp., Oklahoma City, Okla., was held at the Morrison Hotel, Chicago, October 25 and 26. It was attended by jobbers, division managers, sales engineers, and technical representatives from the various distribution centers.

Athlete's Foot

(*From Page* 131)

teriological testing technic, the operating procedure has been patterned along the lines of that of the Food and Drug Administration method of testing disinfectants.

The authors wish to acknowledge the kind cooperation of the Medical Department of the Philadelphia Board of Education and the management of the Central Y.M.C.A.

References

Klarmann, E., Shternov, V. A., and Gates, L. W., 1934. The bactericidal and fungicidal action of homologous halogen phenol derivatives and its "quasi-specific" character. I. Derivatives of parachlorophenol. J. Lab. Clin. Med., *19*, 835-851. II. Derivatives of orthochlorophenol. Ibid., *20*, 40-67.

Manila Gums

(*From Page* 121)

The casein solution is stirred into the wax emulsion while the latter is at a temperature of 85°C., and the stirring is continued at this temperature for 10 minutes. The mixture is then permitted to cool to room temperature and evaporation losses made up with the necessary amount of water.

This emulsion may then be mixed with a Manila resin solution at room temperature and polishes whose films dry clear may be obtained. It is again emphasized that other protective colloids will probably work similarly and should be investigated.

In testing a series of wetting agents to determine their effect in promoting better leveling and spreading of resin solution-wax emulsion mixtures, it was found that "Triton W-30" in amounts of 1-2 per cent on the weight of the resin solution offered the best possibilities. It has been used by dissolving it in the resin solution before mixing with the wax emulsion.

Stability of Polishes

TESTS on the stability of a number of polishes point to certain factors which influence this property. Other things being equal, mixtures high in resin are less stable than those of lower resin content. However, 50:50 resin: wax mixtures have kept satisfactorily for a period of months in this laboratory. Therefore, the ratio of resin: wax which is used must in part depend upon the degree of stability which is required in the polish. For instance, in the sale of polishes to maintenance and sanitary departments of large buildings where there is a rapid turnover, the greatest degree of stability is not required. On the other hand, where it is possible that a container of polish may remain on a shelf for a long period of time, better stability may be needed.

Other factors on which the stability of a polish depends are the amount of emulsifying agent used in making the wax emulsion and the percentage solids content of the polish. Larger amounts of emulsifying agent result in greater stability. In addition, especially where high resin-wax ratios are used, lower percentage solids concentrations will result in better stability. For instance, the stability of polishes containing equal parts of resin and wax was found to be better at 12 per cent solids content than at 15 per cent.

Lastly, the use of a protective colloid is again indicated in order to obtain better stability. For example, the casein solution described above contributes somewhat to this property. Other protective colloids may be tried.

Conclusions

Alkaline solutions of Manila resins may be used satisfactorily to contribute gloss, lower cost, and better wetting to bright drying water emulsion wax polishes.

The polishes are made in three steps:

1. Preparation of an aqueous Manila resin solution.
2. Preparation of a wax emulsion.
3. Mixing the Manila solution with the wax emulsion.

Many alkalies may be used to prepare the Manila solutions which vary somewhat in properties according to the alkali used.

Established carnauba wax emulsion formulae are satisfactory for use with the resin solutions. The ratio of resin to wax used may be varied over a wide range and depends upon the final properties desired, such as gloss, cost, stability, etc. It is felt that other wax emulsions than carnauba may be used with Manila resin solutions to manufacture satisfactory polishes for some applications.

Literature References

(1) Allan, R. W.—"Resin-Wax Combinations," *Chemical Industries*, May 1938.

(2) Robertson, H. F. and Wilson, A. L., "Comments on Morpholine in Wax Polishes," *Soap and Sanitary Chemicals*, August 1938.

(3) Thomssen, Dr. E. G., and Johns, Dr. J. R.—"Liquid Floor Waxes—Part II"—*Soap and Sanitary Chemicals*, July 1941.

(4) Glickman, Charles S., "Water Emulsion Waxes," *Soap and Sanitary Chemicals*, Vol. XII, No. 5, p. 97, May 1936.

(5) Ibid, Vol. XII, No. 6, p. 119, June 1936.

(6) "Emulsions," sixth edition, p. 24, Carbide & Carbon Chemicals Corporation.

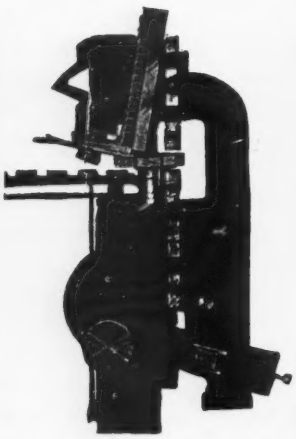
(7) Glickman, Charles S., "Emulsion Floor Waxes"—*Soap and Sanitary Chemicals*, Vol. XII, No. 12, p. 121, December 1936.

(8) Barry, T. Hedley—"Natural Varnish Resins," D. Van Nostrand Company, New York City.

(9) Skett, Anthony—"Natural Resins —General Properties and Applications" —*American Paint Journal*, May 19, 1941 and May 26, 1941.

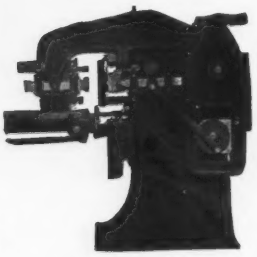
(10) Skett, Anthony and Scully, William C.—"Viscosities of Solutions of Manila Copals"—*Paint, Oil and Chemical Review*, July 3, 1941.

Special Offerings of SOAP MACHINERY *Completely Rebuilt!*

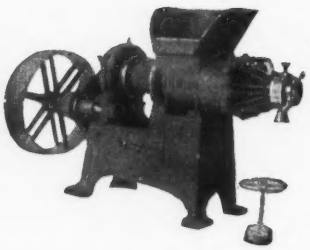


Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

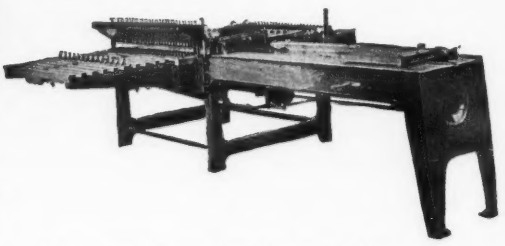
H-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.



2 Automatic Power Soap Cutting Tables.

INVESTIGATE THESE SPECIAL BARGAINS

•

Johnson Automatic Soap Chip Filling, Weighing and Sealing Machines for 2 lb. and 5 lb. Packages guaranteed in perfect condition.

•

ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

- H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
- Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
- Ralston Automatic Soap Presses.
- Scouring Soap Presses.
- Empire State, Dopp & Crosby Foot Presses.
- 2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
- H-A 4 and 5 roll Steel Mills.
- H-A Automatic and Hand-Power slabbers.
- Proctor & Schwartz Bar Soap Dryers.
- Blanchard No. 10-A and No. 14 Soap Powder Mills.
- J. H. Day Jaw Soap Crusher.
- H-A 6, 8 and 10 inch Single Screw Plodders.
- Allbright-Nell 10 inch Plodders.
- Filling and Weighing Machine for Flakes, Powders, etc.
- Steel Soap frames, all sizes.
- Steam Jacketed Soap Remelters.
- Automatic Soap Wrapping Machines.
- Glycerin Evaporators, Pumps.
- Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
- Perrin 18 inch Filter Press with Jacketed Plates.
- Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
- Day Grinding and Sifting Machinery.
- Schultz-O'Neill Mills.
- Day Pony Mixers.
- Gardiner Sifter and Mixer.
- Proctor & Schwartz large roll Soap Chip Dryers complete.
- Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
- Day Talcum Powder Mixers.
- All types and sizes—Tanks and Kettles.
- Ralston and H-A Automatic Cutting Tables.
- Soap Dies for Foot and Automatic Presses.
- Broughton Soap Powder Mixers.
- Williams Crutcher and Pulverizer.
- National Filling and Weighing Machines.

Send us a list of your surplus equipment—
we buy separate units or complete plants.

NEWMAN TALLOW & SOAP MACHINERY COMPANY

1051 WEST 35th STREET, CHICAGO — Phone Yards 3665-3666

Our Forty Years Soap Experience Can Help Solve Your Problems

CLASSIFIED ADVERTISING

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Soapmaker and Chemist—practical experience in all kinds of soaps. Would like to connect with progressive concern where up-to-date manufacturing methods would be beneficial. Address Box No. 254, care *Soap & Sanitary Chemicals.*

Soapmaker and Chemist with long experience making all kinds of soaps; glycerine recovery, etc. Can take full charge of plant. Address Box No. 255, care *Soap & Sanitary Chemicals.*

Soapmaker & Chemist—capable of superintending plant. Familiar with extraction and refining oils. Also knows rendering business. Address Box No. 257, care *Soap & Sanitary Chemicals.*

Soap Maker—Superintendent—Over forty years experience in manufacture of all types of toilet, laundry, potash and textile soaps in United States, South America and Europe. Seeks new connection. Will go anywhere. Full knowledge of all machines, management, departments, construction, operation and design of equipment and plant; chemical control of processes; research and development of new products and processes; recovery of by-products. Seeking new connection. Presently employed. Married, pleasing personality, tactful, energetic, resourceful, adaptable, and versatile. Good organizer. Dependable and reliable. Address Box No. 251, care *Soap & Sanitary Chemicals.*

Sales Representative—Twelve years with one company, interested in getting quality manufacturer of industrial soaps to warehouse car-load stock in the Miami, Florida, area, on credit arrangement. Fine past record and following assures real outlet. I am financially able to carry myself and hope to set up sales organization to cover entire state. Best references. Address Box No. 252, care *Soap & Sanitary Chemicals.*

Industrial Chemist, production, research, several years experience waxes, gums, emulsions, cleaners, liquid soaps, textile chemical specialties, cosmetics, seeks position anywhere. Address Box No. 263, care *Soap & Sanitary Chemicals.*

Available—Soap salesman with restaurant and institutional following for Southern California. Age 36. 8 years experience. Now employed non-selling. Address Box No. 253, care *Soap & Sanitary Chemicals.*

Cleanser Sales—Man with 15 years' background in the sale of assorted bulk cleansers direct to the institutional trade for leading manufacturers, desires new connection where his experience in this field will be of mutual value. For further details reply to Box No. 231, care *Soap & Sanitary Chemicals.*

Positions Open

Soap Maker: Experienced soap maker familiar with details of manufacture of milled toilet soaps particularly, is wanted by large soap manufacturer. Give details, salary, etc. Replies held in strict confidence. Address Box No. 248, care *Soap & Sanitary Chemicals.*

Cleanser Manufacturer—Man with some experience in plant work on manufacturing cleansers, detergents, etc., and with chemical training, wanted to do technical service and sales work among dairies, hotels, institutions, food plants, etc. Good future with well-established eastern manufacturer for right man. Give full details in reply, experience, salary, etc. Replies confidential. Box No. 230, care *Soap & Sanitary Chemicals.*

Representation in Canada—Firm with modern factory and distributing organization in Canada desires to represent American manufacturers of chemical specialties, sanitary products, toilet preparations and allied products. We can manufacture goods in Canada for firms not equipped to ship to the Canadian market. For further details address Box No. 235, care *Soap & Sanitary Chemicals.*

Miscellaneous

Soapmaker with knowledge all kinds laundry, mottled, cold-process, boiled soaps, desires to invest in small manufacturing soap business in or near New York. Address Box No. 258, care *Soap & Sanitary Chemicals.*

Potash Soaps: Qualified sales organization wanted to represent potash soap specialty department of well-known manufacturing firm on the eastern coast. Company located in middle west desires firm now contacting jobbers, janitor supply houses, etc. Communicate with Box 249, care *Soap & Sanitary Chemicals.*

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Rebuilt Guaranteed Machinery: Two Roll Soap Chilling Unit, motor driven; Proctor Soap Dryer; Crutchers; Plodders; Soap Presses, automatic and foot operated; 12x30 & 16x40 Three Roll Water Cooled Steel Mills; 2, 3, & 4 Roll Stone Mills; Johnson Carton Sealers; Powder Fillers & Mixers; Chippers; Vert. & Horiz. Mixers; Grinders; Boiling Kettles; Cutting Tables; Soap Frames; Filters & Filter Presses; Pumps, etc. Send for Soap Bulletin No. 402. Stein Equipment Corp., 426 Broome St., New York City.

Party with large volume sales will purchase-lease-or join partnership with manufacturer of Textile and Laundry soaps now in operation. Address Box No. 250, care *Soap & Sanitary Chemicals.*

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 256, care *Soap & Sanitary Chemicals.*

Wanted—Packaging machine for filling one and two-pound cans of Drainpipe Solvent (Caustic Soda). Write care of Box No. 262, care *Soap & Sanitary Chemicals.*

. . . Official Test Insecticide

STOCKS of the 1941 Official Test Insecticide are available for immediate shipment from the office of this Association. The 1941 O.T.I. is required for all testing and grading of fly sprays by the official Peet-Grady Method. The 1941 O.T.I. will remain official until June 1, 1942.

Directions for use of the O.T.I. and the technique of the Peet-Grady Method are given in a booklet, a copy of which is included in each carton of O.T.I.

The O.T.I. is available at $5.00 per dozen bottles, plus shipping costs, to members of this Association. To non-members, there is an additional service charge of $1.00 per dozen bottles. Single bottles are $1.00 each. Check with order is required.

▼

National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street — New York

OFFICERS

President . . . . . W. J. Zick, Stanco, Inc., New York
First Vice-President . . . . . John Curlett, McCormick & Co., Baltimore
Second Vice-President . . . . . H. A. Nelson, Chemical Supply Co., Cleveland
Treasurer . . . . . John Powell, John Powell & Co., New York
Secretary . . . . . Ira P. MacNair, MacNair-Dorland Co., N. Y.

BOARD OF GOVERNORS

Gordon M. Baird
Baird & McGuire, Inc., Holbrook, Mass.
J. L. Brenn . . . . Huntington Labs., Inc., Huntington, Ind.
R. O. Cowin . . . . . Standard Oil of Ohio, Cleveland
W. B. Eddy . . . Rochester Germicide Co., Rochester, N. Y.
H. W. Hamilton . . White Tar Co. of N. J., Kearny, N. J.
P. B. Heller . . . . . B. Heller & Co., Chicago
Dr. E. G. Klarmann
Lehn & Fink Prods. Corp., Bloomfield, N. J.
Wallace Thomas . . . . . Gulf Oil Corp., Pittsburgh
R. H. Young . . . . Davies-Young Soap Co., Dayton, O.

PROFESSIONAL DIRECTORY

SKINNER & SHERMAN, INC.
246 Stuart Street Boston, Mass.
Bacteriologists and Chemists
Disinfectants tested for Phenol Coefficient. Toxicity Index determined by chick embryo method of Salle. Antiseptics tested by agar cup plate and other standard methods.
Chemical Analyses and Tests of All Kinds

STILLWELL AND GLADDING, Inc.
Analytical and Consulting Chemists
Members Association of
Consulting Chemists and Chemical Engineers
130 Cedar Street New York City

KILLING
strength of Insecticides
by PEET GRADY METHOD
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger or Seil Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
GRIDLEY, ILLINOIS

FOSTER D. SNELL, INC.
Our staff of chemists, engineers and bacteriologists with laboratories for analysis, research, physical testing and bacteriology are prepared to render you
Every Form of Chemical Service
313 Washington Street Brooklyn, N. Y.

ALAN PORTER LEE, Inc.
Contracting and Consulting Engineers
Design and Construction of Equipment and Plants for Producing and Processing Fats, Oils, Soaps and Related Products
136 LIBERTY STREET, NEW YORK, N. Y.
Cable Address: "ALPORTLE", New York

CONSULTANTS
offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 4,000 firms needing help of a professional nature.

H. A. SEIL, Ph.D. E. B. PUTT, Ph.C., B.Sc.
SEIL, PUTT & RUSBY, INC.
Analytical and Consulting Chemists
Specialists in the Analysis of Organic Insecticides, Pyrethrum Flowers, Derris Root, Barbasco, or Cube Root—Their Concentrates and Finished Preparations
DRUGS — ESSENTIAL OILS — SOAP
16 East 34th Street, New York, N. Y.

Soaps • Waxes • Polishes
Detergents • Disinfectants
Analysis Research
Formula Development
HochstadterLaboratories
INCORPORATED
254 West 31st St. New York City

SOAPS — VEGETABLE and ANIMAL FATS — GLYCERINE — DETERGENTS
Analysis — Research — Consultation
H. P. TREVITHICK, Chief Chemist
New York Produce Exchange
2 BROADWAY NEW YORK

Patents—Trade Marks
All cases submitted given personal attention
Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees"—Free
Lancaster, Allwine & Rommel
PATENT LAW OFFICES
Suite 402, Bowen Building Washington, D. C.

Refer To Your 1941
BLUE BOOK
for F.D.A. Method for Testing of Disinfectants and Antiseptics.
Official N.A.I.D.M. Method for Testing and Grading of Insecticides.
Free with a $3.00 subscription to SOAP.
$4.00 Foreign
MAC NAIR-DORLAND CO.
Publishers
254 W. 31st Street New York, N. Y.

INDEX TO ADVERTISERS

*** For further details see announcement in 1941 SOAP BLUE BOOK**

Every effort is made to keep this index free of errors, but no responsibility is assumed for any omission.

Tale Ends

GLYCERINE—All talk of glycerine in the soap industry hinges on the recently established price ceiling by O.P.A. There is some rather strong feeling on the subject if we may judge by comments here and there. Only time will tell if this price-fixing move will interfere with production. Some say it will and others say it will not.

* * *

Every time a Japanese statesman issues a tough statement about conditions in the Pacific, a small potash soap manufacturer whom we know dashes into his storage shed and counts up his supply of coconut oil.

* * *

Newest thing in insect control movie films,—"Combat," a 2,200 foot film on the control of agricultural insects produced by General Chemical Co. with Lowell Thomas doing the talking. They say it is really a great job.

* * *

Perfuming materials—Where there was a scarcity of natural oils some time back, now there are little or no stocks of most natural oils, and on top of this, supplies of the synthetics and other substitutes are becoming more difficult to obtain. Considering conditions, the perfuming of finished soaps on the market appears to be mighty good.

* * *

In spite of having nothing to sell, a recent check up shows that nine out of ten leading manufacturers and suppliers intend to do as much or more trade advertising in 1942 as was done in 1941.

* * *

Have you received a notice lately to the effect that your subscription to *Soap & Sanitary Chemicals* is about to expire? If so, send in your check promptly. This is no time to miss any issues!

The bonds of friendship built up through the years we have served you have gradually become a thing apart from sheer, cold commerce. A toast to this continued relationship.

UNGERER & COMPANY

13-15 West 20th Street, NEW YORK

Philadelphia • Chicago • Boston • St. Louis • Los Angeles • San Francisco • Toronto

12 YEARS AGO

WE ATTENDED OUR FIRST CONVENTION ...AND WERE WE PROUD!

AFTER years of experimentation, we had developed Pyrocide 20. We thought then it was just about perfect as it was the first standardized Pyrethrum Concentrate. Never before had it been possible to make a pyrethrum spray that was uniform in killing power. However, our chemists thought even it could be improved, and while we threw out our chests, they threw off their coats and went to work.

In these 12 years they have made our original satisfaction with Pyrocide 20 seem a little overdone, for they have been improving it and its method of manufacture steadily, until today we are selling it at the lowest price in many years. Not only that, they have made a Pyrocide 20 which is practically odorless and free from precipitate.

Now we feel prouder than ever, and we are trusting our chemists to keep us in the lead. You, too, will feel proud of your insecticide if you use Pyrocide 20. You will be just plain excited when you realize what a nice profit it gives you at this new price.

McLAUGHLIN GORMLEY KING COMPANY • Minneapolis, Minnesota

REPRESENTATIVES

CHEMICAL SALES CORPORATION
1382 Niagara Street, Buffalo, N. Y.

L. H. CARLSON
Michigan Building, Detroit, Michigan

LINDER & COMPANY
296 N. Beacon Street, Boston, Mass.

WISCONSIN MINERAL SPIRITS CO.
1719 Eighty-Third St., Milwaukee, Wis.

CARL F. MILLER and CO.
Seattle, Spokane, Wash.

MILLER & ZEHRUNG CHEMICAL CO.
Portland, Oregon

BAKER & GAFFNEY
12 South 12th St., Philadelphia, Pa.

L. H. BUTCHER COMPANY
15th & Vermont Streets
San Francisco, California

K. LESTER WILSON
600 No. Eutaw St., Baltimore, Md.

L. H. BUTCHER COMPANY
2030 Bay Street
Los Angeles, California

G. S. ROBINS & COMPANY
126 Chouteau, St. Louis, Mo.

WILLIAM J. HOUGH COMPANY
2445 West Congress Street
Chicago, Ill.; Fort Wayne, Indiana

W. W. ANGUS, INC.
239 11th Avenue, New York, N. Y.

BARADA & PAGE, INC.
Kansas City, Missouri; Oklahoma City, Okla.; Tulsa, Oklahoma; Dallas, Texas; Houston, Texas; New Orleans, La.; Wichita, Kansas

PYROCIDE 20

THE PUREST FORM OF PYRETHRINS COMMERCIALLY AVAILABLE